

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 1807.—VOL. XL.

London, Saturday, April 9, 1870.

WITH (SUPPLEMENT) STAMPED ... SIXPENCE.
(UNSTAMPED) FIVEPENCE.

M. R. JAMES CROFTS, STOCK AND SHAREBROKER,
No. 1, FINCH LANE, CORNHILL.
(ESTABLISHED 1842.)

HOLDERS of mining shares DIFFICULTY OF SALE in the open market may find purchasers for the same through Mr. CROFTS' agency. Also parties requiring advice how to act in the disposal or abandonment of doubtful mining stocks may profitably avail of Mr. CROFTS' long experience on the market. In all cases of doubt or difficulty, legal or otherwise.

The continued rise in tin is creating an immense demand for shares in good tin mines. At the ROCHE CONSOLIDATED TIN MINE (Roche, Cornwall), in 3000 shares, large returns can be made at a very low cost, whilst black tin is now nearly £80 per ton. The middle lode, which is now being driven upon, is 8 ft. wide, and worth 30 lbs. of tin to the ton of the lode, and only 6 fathoms from surface. The shares at present are only 10s., but they will shortly rise to at least double or treble this price. The mine is situated at the head of the celebrated Goss Moors, from which millions worth of tin have been raised.

Bankers : Metropolitan Bank.

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50 Anglo-Argent., £1 1/2.
10 Asheton, £9.
23 Australian United, Gold, £3 3s. 9d.
75 Anglo-Austral., 20s.
40 Anglo-Brazilian.
15 Bwld Consols, £3 1/2.
50 Bonfroyd, £1 1/2. 3d.
20 Chontales, £1 1/2.
35 Carn Camborne, 18s 9d.
16 Cape Copper.
2 Devon Consols, £1 1/2.
25 Don Pedro, £1 1/2. x div.
50 Drake Walls, 27s.
10 Eclipse, 27s.
10 East Lovell, 25s.
25 East Grenville, £2 1/2.
15 East Caradon, £4 1/2.
75 Frontino, 18s, call pd
25 Frank Mills, £3 1/2.
75 Great Western.
75 Great Laxey.
10 Gen. Brazilian, 18s.
20 Gonatova, 4s.
20 Great Vor., £1 1/2.
50 Holmbush and Kelly
Bray, 28s. 9d.
10 Marke Valley, £7 1/2.
50 No. Treskerby, 15s 6d.
15 Pen'Allt, £2 1/2.
15 Pen-y-Alt, £5.
15 Pen-y-Alt, £5.
10 Prince of Wales, 16s 3d.
20 Prince of Wales, 16s 3d.
50 Phillips, 15s. 6d.
50 Pustreana, £1 1/2.
10 South Caradon, £4 1/2.
10 Tan-yr-Alt, £5.
10 Van Consols, £3 1/2.
10 Van Consols, £3 1/2.
10 West Maria, £2 8s. 9d.
50 West Pant-y-Go, 15s.
50 West Pant-y-Go, 15s.
50 West Godolphin, 12s.
BUYER of Great Laxey at £1 1/2.

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Bankers : City Bank.

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70 AND 71, BISHOPSGATE STREET WITHIN, LONDON, E.C.
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Business transacted for cash or the fortnightly settlement in all Stocks and Shares; and Special Business in Providence, Great Vor., West Chiverton, Bwld Consols, East Lovell, Devon Great Consols, East Botts Hill, Frontino and Bolivia, Pustreana United, Chontales, and Australian United.
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150 Anglo-Brazil., 9s. 3d.
20 Asheton, £9.
25 Bonfroyd, £4 1/2.
25 Bwld Consols, £3 1/2.
100 Bwadrain Con., £2 1/2.
10 Chiverton Val., £4 1/2.
75 Chontales, £1 1/2.
15 Carn Camborne, 17s 6d.
20 Drake Walls, 25s.
1 Devon Con., £10 1/2.
Daily Price List published every evening in time for post (free).
Bankers : London Joint-Stock Bank.

M. R. J. HUME AND CO., STOCK AND SHAREDEALERS,
74, OLD BROAD STREET, LONDON, E.C., have BUSINESS IN—
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20 Asheton.
20 Penrhyn.
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20 Caegynon.
A BUYER of West Pant-y-Go, West Tankerville, West Stiperstones, and Tankerville. Orders negotiated by telegram for cash or account. Commission 1/4 per cent.
The "Investment Record and Mining Review" free to clients, or per post 6d. per copy.
Bankers : The London Joint-Stock Bank.

M. R. WILLIAM MARLBOROUGH, 1, GREAT ST. HELEN'S,
BISHOPSGATE STREET, LONDON, E.C. (Established 18 years), has FOR SALE the FOLLOWING SHARES, at net prices:-
25 Aberdaunant.
10 Asheton, £3 1/2.
50 Anglo-Argent., 22s 6d.
20 Australian United, 13s. 9d. prem.
20 Bwld Cons., £3 1/2.
20 Bonfroyd, £4 1/2.
25 Bwadrain Cons., 40s.
25 Chontales, 28s.
25 Chiverton, 4s. 9d.
10 Chiv. Valley, £4 16s 3d.
20 Caldeck Fells, 27s.
10 Chiv. Moor, £5 8s 9d.
20 Drake Walls, 26s. 9d.
20 Don Pedro, £5 17s 6d.
1 Devon Cons., £10 1/2.
10 Eclipse, 2s. 3d. pm.
20 East Botts Hill, 15s.
HAMMETT.—A very important discovery has been made at this mine, and the shares should be immediately secured.

M. R. GEORGE BUDGE, STOCK AND SHAREDEALER,
No. 4, ROYAL EXCHANGE BUILDINGS, LONDON, E.C. (Established 21 years), is a SELLER at net prices of:-
100 East Grenville; 2 Minera; 90 Redmoor; 10 Tankerville; 50 West Tankerville; 15 Asheton; 1 Devon Consols; 75 Bwadrain Consols; 32 Hammett; 40 Caldeck Fells; 25 Hington Down; 30 South Merlin; 20 Bwld Consols; 16 Great Rock; 50 Prince of Wales; 5 Nanglas; 70 New Crown Hill; 40 Wheat Trellawny, 9s. 9d.; 55 Polbrean; 10 North Croft; 50 Cefn Consols; 5 Great Laxey; 30 Aberdaunant; 200 Worthing; 100 Anglo-Brazilian; 80 Anglo-Italian; 150 New Quebrada; and 30 United Mexican.
Mr. BUDGE advises investors to secure an interest in Bwadrain Consols. There were sold on the 31st ult. 40 tons of silver-lead ore.

**CORNISH AND WELSH (LEAD) MINES—
FOREIGN GOLD MINES.**

TO SHAREHOLDERS AND OTHERS.
PETER WATSON'S "WEEKLY MINING CIRCULAR AND SHARE LIST—SYNOPSIS OF CORNISH AND DEVON MINES," of Friday, April 8, No. 579, Vol. XII., price 6d. each copy, forwarded on application, contains information on the following mines:-

Tankerville. Great Laxey. Great Wheal Vor.
North Croft. Drake Walls. East Wheal Lovell.
West Caradon. East Wheal Seton.
And full particulars of West Tankerville Mine, and important information on the Tin Trade, &c.

**THE LONDON DAILY RECORD—
STOCK AND SHARE LIST.**

Published every evening at 5 o'clock.
Forwarded by same night's mail to subscribers.

Entered Stationers' Hall, July, 1866.

Contains the latest closing prices of any share-list published; showing the rise and fall in railways, banks, foreign stocks, colonial securities, American securities, foreign railways; telegraphic, insurance, steamship, and miscellaneous shares; Cornish and Welsh

With remarks on the daily operations, and advice as to purchases or sales. Annual subscription, £1 1s.; by post, £2 2s.; monthly subscription by post, 4s.; single copy, 1d.; by post, 2d.

Published by P. WATSON, Stock and Sharedealer, 79, Old Broad-street, London, E.C.

M. R. EDWARD COOKE,
STOCK AND MINING SHAREDEALER, 76, OLD BROAD STREET
(and Mining Exchange), LONDON, E.C.

TANKERVILLE.—This mine having been so fully reported by the manager, Captain Arthur Waters, I need make no further reference to its merits than to refer my friends to an attentive perusal of same. I strongly advise an immediate purchase of those shares, feeling confident they will still have a great rise in price.

WEST TANKERVILLE should also be bought at once.

Bankers : Alliance Bank.

M. R. JAMES STOCKER, STOCK AND SHAREDEALER,
31, THREADNEEDLE STREET (and Mining Exchange),
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No. 42, CORNHILL, LONDON, E.C.
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Asheton. Great Rock. Chontales.
Bronfroyd. Nantos Consols. Frontino.
Caldeck Fells. Van. East Lovell.
Cardigan Bay Consols. Van Consols. New Lovell.
South Cardigan. West Maria. Tan-yr-Alt.
Cefn Consols. Wh. Kitty (St. Agnes). Tankerville.
Drake Walls. Wheal Seton.
Don Pedro. St. John del Rey. Pen'Alt.
Crown Quarry. Morben. Cwmboel. Apperley.

CARDIGAN BAY CONSOLS (Silver-Lead and Blende).—We again repeat that this will be one of the great prizes of the year. Shares should be at once secured.

SOUTH CARDIGAN.—We recommend the immediate purchase of these shares.
FRANK LIMMER, Secretary.

M. R. J. B. HAWKES, STOCK AND SHAREDEALER,
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Mr. J. B. HAWKES has FOR SALE the following shares:-

50 Anglo-Argent., 22s. 6d.
10 Asheton, £3 1/2.
50 Drake Walls, 26s. 9d.
5 E. Lovel, £24 8s. 9d.

10 Gen. Brazil., £2 1/2.
5 Gt. Laxey, £1 1/2.
20 Great Rock, £7 1/2.
20 Tan-yr-Alt, £5 1/2.
20 West Pant-y-Go, 16s 3d.

200 Virtuous Lady (or
partly paid), 19s. 6d.
500 Wm. Bent, £1 1/2. 6d.

500 Nantos Cons. (fully paid), 19s.
20 Tankerville, £1 1/2.
100 Great Rock, £7 1/2.
30 Asheton, £8 7s. 6d.
10 Great Vor., £1 1/2.
20 Liwernog (fully pd.), £2.

1000 Rhydaltog, £2 1/2.
50 Holmbush and Kelly 102 No. Treskerby, 14s.
50 Excelsior, Bray (offer wntd.).
25 Caegynon, £2 1/2.
25 Hammett, £4 12s. 9d.

BUYER of any part of 300 Van Consols, at £3 12s. 6d.; 50 West Maria, £1 2s. 3d.; and 200 Kiddy (St. Agnes), £6 9s.

EXCELSIOR TIN AND COPPER MINE.—Mr. HENRY MANSELL still recommends the purchase of these shares, as likely for a rise of some hundreds per cent. during the present year. Copies of Mr. J. H. Hitchins's recent report can be had on application to the above address, where also specimens of the ore discovered, plans of the mine, &c., can be seen.

References exchanged.

Bankers : London Joint-Stock Bank.

M. R. E. J. BARTLETT, STOCK AND SHAREDEALER,
No. 30, GREAT ST. HELEN'S, LONDON, E.C., transacts business at net prices in every description of security.

* SPECIAL BUSINESS in West Tankerville, Tankerville, Nantos, Great Western, Caldeck Fells, East Scoton, Frank Mills, North Pool, Wheal Agar, and New Lovell shares.

M. R. THOMAS THOMPSON, STOCK AND SHAREDEALER,
AND MINE AGENT, 12, OLD JEWRY CHAMBERS, LONDON, E.C.

Mr. THOMPSON being in communication with some of the most experienced miners in Wales, is in a position to afford reliable information to those seeking investments in the lead mines of the Principality.

The investing public should not forget the severe lesson taught by the late panic, that Stock Exchange prices by no means represent the intrinsic or permanent value of any property.

Mr. THOMPSON recommends the purchase of NEW CENTRAL SNAILBEACH shares, as this mine will become the most valuable property in the district; also of LLANIDLOES WHEAL VAN.

Advantage should be taken of the late fall in PACIFIC shares, which should be bought, together with SWEETLAND CREEK.

Free on application a few remarks on "Mining in the Llanidloes (Van) district," also on "The Science of Investments."

M. R. CHARLES THOMAS,
MINING AGENT, AND GENERAL SHAREDEALER,
3, GREAT ST. HELEN'S, LONDON, E.C.

M. R. WOODHOUSE AND CO., 416, STRAND, LONDON,
E.C., have FOR SALE the following shares at net prices:-

50 Aberdaunant, £2.	25 Drake Walls, £1 1/2.	50 Pen'Alt.
50 Anglo-Argent., 3-16ths	5 East Lovell, £2 24s.	10 Pacific, £2 1/2.
10 Asheton, £2.	10 Great Laxey, £1 1/2.	10 Penrhyn, £2 1/2.
25 Bwld Consols, £3 1/3.	10 Great Vor., £1 1/2.	20 Rhinlith, £2 1/2.
30 Bonfroyd, £4 1s. 3d.	5 Great Rock, £2.	20 Tankerville, £1 1/2.
30 Cefn Consols, £1 1/2.	10 Hammett.	20 Tan-yr-Alt, £2 1/2.
30 Devon Consols, £1 1/2.	2 Miners, £1 2s.	50 Taquari, £2 1/2 pm.
30 F. D. Consols, £1 1/2.	20 Nantos Cons., 18s 6d	50 Van Consols, £2 1/2.
40 Don Pedro, £2 3/4 pm.	10 North Levant.	15 West Maria, £2 1/2.
40 Devon Consols, £1 1/2.	12 New Lovell, £2 1/2.	3 W. Wh. Seton, £1 1/2.
2 Dolcoath, £1 27s. 6d.	35 No. Treskerby, 18s.	

Messrs. WOODHOUSE advise the purchase of the following shares for an early rise—Tankerville, Nantos Consols, Rhylatalog, and Cefn Consols.

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THE MINING JOURNAL.

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The property is 640 fms. in length on the course of the lodes, and is situated north of Frank Mills, in the same valley, and contains the same lodes. Frank Mills Mine has returned within the past twelve months above £16,000 worth of lead ore, leaving a net profit of above £5000 for the adventurers.

It is estimated that there are about 100,000 tons of barytes already discovered above the adit level, and that it can be raised and sold, either in its unmanufactured or manufactured state, at a large profit.

Applications for shares to be made to the Secretary, at the company's offices, of whom full prospectus and information can be obtained.

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(LIMITED).

To be incorporated under the Companies Acts, 1862 and 1867.

CAPITAL £15,000, IN 15,000 SHARES OF £1 EACH.

Deposit Five Shillings per share on application, Five Shillings per share to be paid July 1, 1870, Five Shillings November 1, 1870,

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SOLICITORS—Messrs. LUXTON AND SON, TAVISTOCK.

SECRETARY—Mr. THOMAS J. BARNARD, 5, ABBEY MEAD, TAVISTOCK.

The introduction of this great English silver mining property to the world is from clear facts indisputably destined to become an era of mining history, and add generally to England's wealth and national prosperity.

The set is held upon liberal terms under the Duchy of Cornwall and other grantors, and is very extensive, being about four-fifths of a mile from east to west, and three-fourths of a mile from north to south. It is situated in the parish of Glastock, Cornwall, and surrounded by the richest copper mines of England, and one hundred fathoms from the old Silver Valley Mine, which returned hundreds of thousands of pounds sterling from the sale of silver ore, and this under very primitive management. There are five known lodes upon the set, independent of the silver lode, which is the same that passes through Silver Valley, and from whence still great wealth has been derived.

No. 1 is the silver lode. There are two trial shafts sunk on this lode to the depth of about 8 fathoms from surface, and a level driven from shaft to shaft, which is only about 26 fms. in length. The lode throughout this drivage is from 2 to 4 ft. wide, composed of flockan, prian, carbonate of iron, interspersed with silver-lead and rich silver ore. From this shallow and very limited and primitive working more than £7000 has in the past few months been received from different smelters for the silver ore sales, disposed of in small quantities, but according to their own assays, varying from 50 to 2000 ozs. to the ton of stuff. There is upon the course of this lode at least one-third of a mile in virgin ground, not so much as a pick put in the earth. Really, when the fact is contemplated of this being one of the richest silver mining districts in the world, proved long since for quality, but never, in a proper sense, tried at all for quantity, it is a puzzle to imagine what the mining world has been thinking of—not that this mine has any prejudice against it, as Capt. Knott (the agent), Capt. Gifford (of Prince of Wales), Capt. Donnel (of West Maria), and other mining celebrities have an exalted opinion of its merits, although from their limited experience in silver mining they cannot half know its sterling wealth.

We now come to Dr. Philpott's analysis, of which the following is a copy, and there is more substantiality in this than the flourishing reports of all the agents of England.

Laboratory of Analytical Chemistry, 4, The Cedars, Putney, London, 3d March, 1870.

ANALYSIS MADE FOR THOS. J. BARNARD, Esq., 5, ABBEY MEAD, TAVISTOCK.

Eight Samples of Silver Ore for Silver (marks as under.)

"No. 1: 1 stone, weighing 5ozs."—Fine silver, 25-324 per cent., equivalent to 8275½ ozs. (troy) to the ton.

"No. 2: Half-ground stone, 8ozs."—Fine silver, 0·492 per cent., or 160½ ozs. to the ton.

"No. 3: 2 stones, 14 ozs."—Fine silver, 0·3075 per cent., or 100½ ozs. to the ton.

"No. 4: 4 lumps, 9 ozs."—Fine silver, 0·086 per cent., or 28 1-10 ozs. to the ton.

"No. 5: 1 lump, 11 ozs."—(This is copper ore).—Fine silver, 0·03 per cent., or 9½ ozs. to the ton.

"No. 6: Decomposed killas, 6 ozs. to the ton.

(Signed) T. L. PHILPOTT, Ph.D., F.C.S. &c.

Member of the Chemical Society of Paris, Professor of Analytical Chemistry.

4, The Cedars, Putney, London, 3d March, 1870.

MY DEAR SIR,—Enclosed are the results of assays; they are all wet assays, and most careful ones. Nos. 1 and 6 were also assayed by dry assay, with as near as possible the same results. These are the finest specimens of silver ore that have ever been sent to my laboratory. Though I have received samples of silver ores now for nearly 11 years past from Cornwall, Scotland, Hartz, Saxony, and Mexico, &c., I never saw finer ones than Nos. 1 and 6 in my life, and have only seen one sample that gave a result at all approaching that which these two gave, and that was native silver in gossan (pure metallic silver running in threads through quartz gossan of a brown rusty colour), and the samples came not many miles from where you got your silver ores. It is well known that the Cornish silver ore is some of the richest in the world, far richer than that of Mexico (which averages 80 ozs. or thereabouts), but it is not so abundant as foreign ones.

This is the most wonderful, promising, and the cheapest mineral property ever brought before the eyes of a discriminating public, taking into consideration the silver with the copper lodes, and faith need not be built upon discrediting masses of pure silver, although, as before stated, there is not a shadow of a doubt that occasional deposits will be met with worth thousands of pounds, but reliance can be centred upon an average of 20 ozs. to the ton of stuff; take the lode as it now stands, pull down 50 tons poll mell, pulverise the whole, and then believe the result will be 20 ozs. to the ton, as the very poorest part contains 6 ozs. Of course it will be prudent to keep a sharp look out for the pure silver, as not to mix it with the poorer stuff, but it will not matter much, as place the whole under the proper treatment of amalgamation, and not a grain will be lost, be it 10 or 1000 ozs. In the future the engine used for keeping the mine clear of water for the development of the copper ore lodes can be applied for working the revolving barrels into which the silver stuff is placed with mercury, after being properly worked and smashed into a pulp, so that the two departments can be carried on under one head of cost.

In conclusion, the public is earnestly invited to come and see for themselves, and any intending shareholder is requested to take a sample of stuff in the silver-house, or inspect the mine and break from the lode itself, and submit it to any analyst. A little time will prove, as soon as the amalgamating process is working successfully, that this property is an immense fortune, which will cause a perfect furor for English mining, as it only requires to be proved that England does contain silver, and in good quantities, for the capital that is now being sent out of the country to be devoted, as it should be, in exploring our own sweet, pretty little Isle. The preliminary work once done in an English enterprise, science soon steps in to lend it a helping hand, and with its rapid strides it is highly probable for England to soon become an exporter rather than importer of silver, as it is possible for 6 ozs. of silver to the ton of stuff to be extracted with profit, there are millions of tons of such stuff that have been turned over in working English mines, and we can now mention a lead lode in an entirely new district where the lode only 2 feet from the surface is composed of gossan and flockan, 30 feet wide, and the average of silver is 7 to 10 ozs. to the ton.

What a blessing, what an achievement for the "Queen" to attain, to be the mainspring of opening up rivers of wealth, adding fresh laurels to England's world-renowned fame for thousands of years, as the first and greatest mining seat of the world, calling back with a hearty welcome her sons of toil from foreign climes, who through the temporary depression of English mining have been forced from actual want of daily work and bread to leave its well-loved shores.

Applications for shares to be made on the forms to be had with prospectus from the secretary or bankers.

Original Correspondence.

FESTINIOG SLATE QUARRIES AND RAILWAY,
MERIONETHSHIRE.

There are 11 slate quarries or mines in operation here; the principal are owned by the Welsh Slate Quarry Company, Mr. Holland, M.P., the Cwm Morthen Company, Mr. Graves, Messrs. Matthews and Son, Mr. Percival, Messrs. Casson and Co. The quarries are chiefly on the same vein. The largest quarry is possessed by the Welsh Slate Company; the vein is 50 feet in thickness, and lies at an angle of 45° northward; the vein produces slate uniformly of a dark blue colour, and of good quality. The production of slate is about 3500 tons per month; employment is given to 300 persons. The quarry was first worked in open work, and about 50 yards in depth was obtained in this manner; now it is got in chambers underground, as in a mine, pillars being left between these chambers to support the superincumbent rocks. The slate is extracted in successive stages of 20 yards in depth. On the north side of the quarry a water-balance pit is sunk, 100 yards in depth; to the bottom of this pit an adit level has been driven from a considerable distance, which thus gives free drainage for this pit and all parts of the quarry above this level. Most of the slate and waste slate is raised at this pit; at the top of it there are extensive sheds and machines for squaring slate, and circular saws for squaring and cross-cutting slabs. There are 23 underground chambers, of the uniform width of 50 ft., dipping at an angle of 45°; the roof is trap rock, dips at 45°; pillars 40 ft. in width are left between the chambers. At present slate is being extracted from the stage below the adit level. Two engines are placed at two different points to raise the material from the bottom up to the level of the adit, equal 20 yards; a turbine is used for pumping water from the same depth. Communication is made between the chambers for ventilation, and for the conveyance of material to the engines; these openings are about 6 feet square at the bottom of the stage. At the level of 60 yards from the top of the quarry, or 40 yards above the adit, the machine is placed in the quarry for weighing all the slate brought from three different parts of it. Near this machine is the foot of water-balance incline, to raise waste; also the tops of two similar inclines raising slate and waste from the level of the adit, the water escaping from the former supplying the two latter. From the weighing machine the finished slate is conveyed away through tunnel cut in the rock under the vein, from whence it descends a self-acting incline, dipping 18 inches per yard, to the main line of railway. One-sixth of the whole extraction is saleable slate. Powder and gun-cotton are both used. The machines for squaring slate to the proper size are put in motion by steam-power; the work is better performed than when done with the foot of the operator. Slabs are not often planed, as they suit better with the natural face for many purposes.

From Festiniog, a road through Dolwyddelan leads to Bettws-y-Coed, distant ten miles. A range of hills on either side are composed of greenstone and slate rock. The greenstone rocks are seen projecting above the surface in every direction between these two ranges. Slate of a dark colour is worked at two or three quarries in this locality, but only in a limited way. A footing can scarcely be obtained for agricultural pursuits; the ground would, no doubt, be most profitably utilised in the growth of timber. From Bettws-y-Coed Railway communication is obtained to Conway, 16 miles distant. The range of hills on either side of the vale of Conway are composed of the same Cambrian rocks: no slate quarrying or any mineral working appears to be in operation here.

The Festiniog Railway, from the slate quarries to Port Madoc, 13½ miles in length, has been in operation about 20 years; at first horse-power was used; for the last six years, however, locomotives have been in use for the conveyance both of minerals and passengers. It is remarkable as producing, perhaps, the highest dividends of any railway in England or Wales. The railroad, a single line, is almost wholly on sharp curves, on a circuitous course, with steep gradients; the gauge is 23½ in. only. Much hard rock was encountered in the cuttings of the railway formation, which precluded the idea of an ordinary gauge, consistent with any profitable result. The line has proved most successful under the circumstances, and will, no doubt, lead to the extensive use of this class of railways in mountainous districts. There are six locomotives in use, with 8-in. cylinders, 12-in. stroke, four 24-in. wheels, coupled, besides one engine on Fairlie's principle. The passenger carriages are 6 ft. 4 in. wide; the floor is 6 in. above the rails. New carriages are being constructed 5 ft. 4 in. wide; the floor more elevated, and the wheels underneath. Fairlie's double-bogie engine, used on this line, has four cylinders, 8 3/16 inch diameter, 13-inch stroke, 28-inch wheels; total weight, 19½ tons. It will take a load of 160 tons after it, at an average speed of 12½ miles per hour, excluding stoppages; steam pressure, 160 lbs. The other six engines are nearly alike as to power; the weight of one is 10 tons, and tank 1½ ton; others are heavier, being tank engines. The speed was limited to 12 miles per hour on the line being passed for passenger traffic. The journey of 13½ miles is done in 1½ hour.

THE PENRHYN SLATE QUARRY, CARNARVONSHIRE.

This quarry is distant six miles from Bangor, and one mile from Bethesda, the latter now containing 6000 inhabitants. The Penrhyn Quarry gives employment to about 3000 men and boys, and has since the year 1782 been carried on by the Lords Penrhyn, increasing in extent and aided by mechanical appliances as the demand for roofing slate has increased. The slate is quarried by open work, and the drainage is effected by an adit level, one mile in length, driven from the valley, to within 40 yards of the deepest part of the quarry. The vein of clay-slate is above 400 yards in breadth; it runs in a north-east and south-west direction, and lies nearly vertically; other slate veins found in the district run in the same direction. These veins alternate with beds of igneous or trap rock, otherwise termed whinstone, or greenstone, and is the predominant rock of this district, the beds varying in colour from dark green to a light shade. This rock is much used for building purposes. The surrounding hills are composed principally of greenstone. Prominent amongst these are Carnedd Llewelyn 3469 ft., and Carnedd Daffyd 3427 ft. above the sea, in the same range with Snowdon, which is 3571 ft. above the sea level. The whole of the Carnarvonshire hills may be said to be composed of this igneous greenstone, alternating with clay-slate and slaty rock, constituting together the Cambrian formation. There is every probability these hills have deposited within them other minerals besides slate and the small portion of copper ore which is found; ironstone is said to exist near the coast, so highly magnetic as to attract the needle, and there are doubtless other minerals of commercial value to be found, should they ever be explored internally, which would prove sources of national prosperity. The hills of Carnarvonshire indicate volcanic action of great extent, and stupendous forces exercised to place the rocks in their present position.

The Penrhyn Quarry is worked from the base to near the summit of a high hill. The slate is extracted in tiers or galleries, each tier being 20 yards in depth, the quarry thus expanding in breadth upwards. There are 15 galleries worked down to the adit level, equal to 300 yards. Each gallery has a railroad running along it on either side, 2-ft. gauge, conveying the slate to various inclines, or water-balance pits. On the north side of the quarry there are three self-acting inclines in succession, serving for 11 galleries, the lowest descending at the top of the balance pits, all on the same level. Each incline serves for three and sometimes four galleries. In sending slate down from the top, these inclines act in the ordinary way; in sending slate from one of the intermediate galleries, the points are turned into it. A balance wagon is run from the top against three empty wagons; these are run into the siding, being replaced by three laden wagons, the latter are run down to the bottom of the incline, which raise the balance wagon up to the top again, ready for another run. On the south side of the quarry there are four of these self-acting inclines, serving for 15 galleries. These inclines are formed with double roads; drums and wire-ropes are used.

The water-balance pits, on the north side, all commence from a common level—that is, four tiers above the adit level, or eleven tiers from the top of the quarry. There are six of these pits above the level of the adit—two of 80 yards depth, two of 60 yards depth, one of 20 yards depth. There is another pit, 120 yards deep, which is sunk 40 yards below the level of the adit, and from which slate in

two tiers is being got. The sinking of this pit necessitates pumping operations; for this purpose a hydraulic pumping-engine, with double cylinders, placed diagonally, is fixed at the adit or 80 yards level. This engine works by day and night, with three bucket lifts, each delivering to the adit level. The carriages at each of the balance pits hold one and sometimes two wagons each, four-linked chains are used; when one of these occasionally breaks, the others hold good. Underneath the carriages there is the balance chain, as usual. The Penrhyn Quarry produces slates of blue, purple, red, and green colours, named in the order of their prevalence; the last is most rare, and sells for double the price of other colours. About one-sixth of the entire vein forms roofing slate, the remainder, or waste, is tipped at the end of each gallery in most cases, so that it may be conceived an immense space is required for this debris. The quarrying and making of slates is all done by piece-work. Several hundreds of sheds and machines are erected for squaring slates; these are placed in particular localities—for instance, at the level of the top of the balance pits a great number of machines are fixed; these machines are suspended from a spring, they cut one side of a slate at each stroke, and are worked by the foot of the operator. Smaller slates are squared by hand in slower manner. The largest size of slate manufactured is the Queen's, 3 ft. long; slates are made of all sizes below this. The lowest self-acting incline on the north side, from the level of the balance pits to the main line of railway, is worked by an endless chain, originally 1 in. thick; four wagons are run at once, in two separate lots. From thence the slates are conveyed in iron wagons, with flanged wheels, to Port Penrhyn, six miles distant; 24 wagons, 2 tons in each, are taken in each train by three horses. There are three intermediate self-acting inclines in this distance, having double roads, drums, and wire-ropes. The gauge of the railroad is 2 feet. A remarkable vein of greenstone, 4 or 5 feet wide, runs through the Penrhyn vein in a north-east direction, a similar one runs in an oblique direction; there are four or more of these at right angles to the former. One of these cross veins may be seen standing in the centre of the quarry, a pillar of greenstone, about 60 yards high and 3 yards in thickness, and another cross vein further on of less height.

The blasting of the slate is performed every hour in the quarry; five minutes is allowed at each period for firing shots: at the sound of a horn the lights are applied, sometimes as many as 50 shots are fired in five minutes. Both powder and gun-cotton are used for blasting: the use of nitro-glycerine has been discontinued.

About one mile from the quarry the machinery for sawing slate slabs is placed. There are eight circular saws and frames and one planing machine. Very little is done in planing; the slabs are sawn and sold extensively for paving, cisterns, &c. Slabs of remarkable strength are found only recently in the quarry, which promise to excel Yorkshire paving in durability and cheapness. These are understood to be extracted from the lowest part of the quarry, the lowest parts as a rule producing the best quality of slates and slabs.

Adjacent to the sawing sheds are built the foundry, machine shop, vertical and circular saw-mills, smiths' and joiners' shops; the latter contains joiners' drilling, mortising, and planing machines, which, considerably economise labour. The whole of the machinery is put in motion by a water-wheel, 20 ft. in diameter, 5 ft. wide. Another small water-wheel works an endless chain used at the weighing machine. Several veins of excellent slate occur between Llandegai and the Penrhyn Quarry. These are all in Lord Penrhyn's property, none of them are at present worked, owing, perhaps, to the very favourable position and productiveness of the quarry at Penrhyn. The Penrhyn vein is not worked at all on the north-east side of the quarry. On the south-west side, seven miles distant, the Llanberis Quarries are in operation on the same vein; they are the property of Mr. G. W. Duff, of Vaynor, and give employment to about 2000 men and boys.

THE NEW COAL FIELD AT NOTTINGHAM.

There is now every indication that the new coal field at Nottingham, the principal seam connected with which was reached on the Clifton estate on March 25, will be one of the most valuable mining properties in the kingdom, seeing that it contains several very excellent seams of workable coal. Its discovery is entirely due to the exertions and the determination of the late Sir R. CLIFTON, Bart., who was the owner of the estate on which the borings were first made, and who, in opposition to the opinions of geologists, and despite the fact that the geological maps did not show that there was any coal to be found in the district, yet felt assured that there were valuable seams of minerals on his property. Supported by the opinion of Mr. J. BROWN, the well-known mining engineer, the usual steps were taken for proving the strata. Accordingly on June 10, 1868, the first sod of No. 1 shaft was turned, amid the acclamations of thousands of the inhabitants of Nottingham and the neighbourhood. The site fixed upon was a field on the Clifton estate, about half a mile from Nottingham, hard by the banks of the River Trent. Sinking was continued without much interruption, although during its progress a good deal of water was encountered, until the lower seam of coal was reached, as above stated. In going through the strata, which included a good deal of grey sandstone, blue blind, shale, and clunch, a considerable quantity of ironstone, that known as the "shell bed," most of it nodules, was met with. Of the coal itself no less than 24 different seams were gone through, of which nine at least are workable, whilst in the last 40 yards sunk there were four seams of coal, of the aggregate thickness of 17 feet. The first seam met with was found at a depth of little more than 60 yards, and was 2 feet 8 inches thick. The principal seams, however, are the "Deep Softs," an excellent house coal, 5 feet thick, and the "Deep Hards," 5 feet 7½ inches thick, a fine stone coal, the distance between the two seams being only 13 yards. The bottom, or Piper, coal was reached whilst sinking the sump, the total depth being 267 yards 2 feet. About 100 yards from the surface is the Dunsil Yard coal, which is a rather important one, seeing that it is considered the key to all the other measures in the coal field, for where it is found the other seams are pretty certain to be met with. Some of the coal contains a thick band of bastard Cannel, having a good deal of oil in it, and locally known as "Rattle Jack." With such really valuable seams of workable coal, and seeing that a road direct from the pit bank to the town of Nottingham, on the Clifton property, can be easily made, the value of the new colliery, situated so advantageously, and with such valuable beds of coal, can scarcely be over-stated. When the two shafts are completed it is expected that about 1000 tons per day will be raised, and which, in all probability, will find a constant and ready market at Nottingham. Should such, however, not be the case, there are other facilities for exporting the produce of the colliery, as the Midland Railway runs quite close to it on one side and the canal on the other. It is a matter of general regret throughout the district that Sir R. CLIFTON did not live to see the completion of the work in which he took a deep and unflagging interest, and the result of his spirited enterprise carried out by him whilst surrounded by difficulties of no ordinary character.

He had evidently looked forward to it as a means of clearing his estate of its encumbrances, and which it would most undoubtedly have done, besides securing a large and permanent annual revenue. This will be at once apparent when it is stated that the estate comprises, as we were informed, nearly 3000 acres, whilst if the two seams, the Deep Hards and Softs, were alone worked they would give a yield of upwards of 15,000 tons per acre, or with the Piper seam about 20,000 tons per acre. On one part of the estate there is a "fault," which will be proved in driving out, but which cannot in any way very materially affect the working. In boring a seam of coal was met with at a distance of 160 yards, whilst the same seam in sinking at a depth of about 60 yards.

With regard to the colliery itself, it may be stated that there are two shafts, the one where the coal has been reached being 14 feet clear in diameter, tubbed with cast-iron to a depth of 80 yards. The No. 2 shaft, which is quite close to the No. 1, is 13 feet in diameter, at present sunk to a depth of about 40 yards, 30 yards of which are tubbed. The machinery, buildings, and appliances are of a first-class description, and of a substantial character. The foundations for the winding-engines are concreted 12 feet below the surface, with 15 feet of solid brick pillars. At present there are on the works a pair of winding-engines at the No. 1 shaft, each of 20-horse power, and a 40-horse power engine at the No. 2 shaft for sinking. There is also a very powerful pumping beam by Gough & Co.

3 tons, and a pair of patent flue boilers by HAWKESLEY, WILD, and Co., of Sheffield. For the purpose of pumping the water out of the shafts there are two 15-inch diameter working barrels, but it is not anticipated that more than one of them will be required. Every preparation has been made for putting down the machinery, which will be necessary when both shafts are completed, and active operations in drawing commenced. Having so far noticed the most recently discovered coal field, with its very valuable beds of coal and iron-stone, and the colliery opened out in the Clifton Hall estate, we cannot conclude our notice without stating that it is the opinion of practical men that the same measures found in it will also be met with in adjoining properties, so that the locality gives every promise of becoming a very important centre of industry so far as the coal trade is concerned, being advantageously situated for doing a large business in the important manufacturing districts around Nottingham, and more especially in the town itself, whilst it will be enabled to reach the London market by the Midland Railway on rather better terms than most of the collieries sending there from the adjoining counties. As Mr. H. R. CLIFTON, the present owner of the estate, is understood not to be desirous of working the minerals on it, the colliery it is expected will be taken to by a company. Worked with energy and with good management the colliery will, doubtless, rank among the best paying mining enterprises which have of late years been opened out. Sinking operations have been carried out so far without any serious accident or hindrance to work, but at present the No. 2 shaft is not being proceeded with, but orders for going on with it are daily expected. Mr. J. BROWN is the engineer, and Mr. MARSH, of Clifton, the manager. The contractor for the sinking is Mr. GREEN, of Clay Cross, and Mr. GILLIVER has charge of the sections, plans, &c. The following are some of the beds of coal gone through in sinking, and from which it will be seen that several of them can be worked advantageously, although, probably, only the two thickest will be got when operations are commenced:

	Thickness.	Depth.
Coal	0 2 8	Yrds. 69 0 11
Coal, Hard Rider Top	2 6 0	70 0 5
Coal, Dunsil	1 0 0	90 0 5
Coal (good)	0 1 10½	113 2 6
Coal	0 0 7½	136 2 8
Coal	0 2 4	154 0 3
Coal	0 1 11	162 0 0
Coal, good Softs	0 2 10	175 11 3
Coal, fine Deep Softs	1 2 0	231 0 0
Coal, Deep Hard	1 2 7½	232 2 0
Coal, Piper	1 0 4	267 2 0

The last seam was come to whilst the men were engaged in making the sump. The depth to the bottom coal, it will be seen, is 267 yards 2 feet, but as the pit bank is raised 12 feet from the surface the actual depth will be 270 yards 2 feet. Coal for the requirements of the works, it may be stated, is now being raised.

ON DIFFERENT METHODS OF WORKING COAL.

Mr. P. COOPER read a paper on this subject at the Midland Institute of Mining Engineers: he commenced by alluding to a communication by Mr. Fowler, who advocated the long wall system of working, without any preliminary strait work, and remarked that other practical men contended that it was better when working a clean bed of coal, with a good roof, at a moderate depth, and with a suitable inclination, to make and maintain both the temporary and permanent roads through coal or in strait work. In estimating the cost of the two systems, Mr. Cooper said that in working the Barnsley bed, 5 feet in thickness, the average cost of strait work coal roads, 9 feet wide, was about 5s. per yard, in addition to the price paid for the coal, which on the same quantity of coal was equal to 2·33 pence per ton. In beds of a similar thickness, however, in the North of England, Lancashire, and North Yorkshire, the cost of coal roads did not exceed 1s. 6d. per yard, or for the same quantity of coal about 4d. per ton. From careful investigation made he was, therefore, of opinion that in clean beds, having a good roof, the cost of coal roads per ton was very much less than the cost of goaf roads, except in cases of very bad roofs, or where an excessively high rate was paid for driving coal roads. With regard to the great influence produced by the weight of the superincumbent strata resting on any coal bed, he considered there was no condition of mining of equal importance to it, and it would be a mistake to suppose that the goaf roads in working long wall were exempt from its influences. But considered simply as passages requiring to be maintained, they could not fail to compare to a disadvantage with coal roads having a good roof sufficiently supported by sufficient pillars. So far as making or maintaining such roads was concerned, it was evident that the advantage must be in favour of roads cut through the natural ready-made support—the coal. Except in beds yielding much refuse in working, the temporary and only support of the roof in goaf roads was the pack walls, of (say) 6 feet each in thickness, or 12 feet for a 22-yard stall, the support being less than 19 per cent. of the gross area, and consisting of unconsolidated material, instead of 75 per cent. of solid consolidated coal. Therefore, if working by long wall did not produce better than any other method coal as large, and with as little small as possible, it had nothing further to recommend it in clean beds of coal, having good roofs, with a moderate inclination, for there could be no doubt that under such conditions it was generally the dearest method of working coal, except in beds consisting of exceedingly hard, coarse coal.

With regard to the production of saleable coal, Mr. Cooper said that there were certain operations, whether in working by long wall or by any other system, which must produce small coal, namely—1. Holing or kirving in the coal.—2. Nicking or cutting.—3. Cleaving up to load webs of coal a yard in thickness.—And, 4. The breaking due to loading into corves, transit, and unloading on the surface. As to holing, if only 6 in. out of the 4½ ft. (as given by Mr. Fowler) were cut up into indisputably small coal by the process, the result would be 11 per cent. of slack from this cause alone, and would be the same in all methods of working. Nicking or cutting 1 ft. out of every 22 yards stall making 1¼ per cent. of small coal. For cleaving up to load 5 per cent. of small coal is a moderate allowance, whilst the breakage by loading and transit to surface averages about 8 per cent., making a total of 25½ per cent. of small coal produced in working a clean bed. Looking at the returns by the long wall system, he saw no reason why as good coal could not be produced at a cheaper cost when the bed was worked by long wall with coal roads instead of goaf roads. With regard to the weight of the superincumbent strata resting on any unworked coal bed, it would be the same in whatever mode of working was adopted. The greater the depth, however, the greater would be the pressure of the strata, and the greater the original elasticity of the coal, roof, floor, and gas. There was a general impression, which he thought was utterly unfounded, that the action of the superincumbent weight was different in long wall and in working by bord and pillar. This, however, could not exist except to the extent that the quantity of coal on which the pressure rests is reduced by the necessary strait work—say, from 15 to 20 per cent. The most important question was undoubtedly the action of the pressure on the coal and roof in the working places. In bord and pillar working, and in many cases of bank working, the practice was to have the working face at right angles to the line of pressure, the result being that the faces and gateways stood much better than in long wall, with an unbroken face line, which would of necessity be parallel, or nearly so, to the line of resistance, and consequently fracture, the result being that tender coals worked in that manner produced better results than when worked by long wall, either with a continuous face line or in steps.

In concluding his very able and interesting paper, Mr. Cooper said that where holing was not made in dirt beds, in working a clean bed of coal, with a good roof, the following general principles would be found correct:—1. Coal roads were generally constructed and maintained cheaper than goaf roads, and the working faces were also more cheaply maintained, as they required to be less permanently supported than in working long wall with goaf roads.—2. The blasting required in making and maintaining goaf roads, where fire-damp was freely evolved in the goafs, was attended with much danger.—3. Making and maintaining coal roads was neither difficult nor expensive, and such roads make better horse, self-acting, and better air-roads than goaf roads.—4. Coal beds, when thinly laminated be-

in very strong coals.—5. That the minimum of slack or small coal which can be provided in working such beds by any method is not less than 25 per cent.—6. That in working coal beds by any method of working 25 to 40 per cent. of slack may be taken as the general results.—7. That in very few cases in working long wall as much as 70 per cent. of the entire bed is obtained of large coal, and that where obtained it is due more to the strength and character of the coal than to the method of working.—8. Where the normal condition of the bed and roof is that of great elasticity it should be worked long wall on the end.

A cordial vote of thanks was awarded to Mr. Cooper for his interesting paper. The general subject was then discussed by the members.

The meeting of the Midland Institute of Mining Engineers at which the above paper was read was largely attended. Amongst those present were Mr. T. Embleton, the president; Mr. P. Cooper, the Holmes Colliery, Macclesfield; Mr. Ell, Warrington; Mr. Maddison, Woolley Colliery, near Derton; Mr. J. Warburton, Warrington; Mr. Fowler, Basford, Nottingham; Mr. Lupton and Mr. Wadson, Chesterfield; Mr. Miller, Stafford Main, Barnsley; Mr. Hunter, Crigglestone; Mr. Collier, Worksop; Mr. J. Beaumont, Mr. Minto, and Mr. Barker, the Oaks Colliery; Mr. J. Wilson, Darfield Main; Mr. Weeks, North Gawber; Mr. Davy, Mr. Mattatt, &c.

THE COPPER TRADE, AND ITS PROSPECTS.

SIR.—We have had forwarded to us, with a request to procure insertion in the *Mining Journal*, the enclosed translation of a letter sent to a firm in Valparaiso by a correspondent in Paris, and we trust you will be able to comply with the writer's wish, and publish it in an early edition.—London, April 8.

COPPER.

SIR.—As it is your wish to know the opinion prevailing in our market about copper, in order to present it to your producers who read with interest news springing from some impartial source, I hasten to fulfil the wish, and to give you my ideas upon an article of such eminent importance.

During a period of three years copper has been engaged in a kind of struggle, marked by fluctuations in price, which seem to give certain limits to its movements. You will remember that at the end of 1867 Mr. Edwards endeavoured to raise the price, and purchased largely at \$13 to \$13½ (the freight to Liverpool was at that time 3½ per ton), and held the copper at the coast, making thereby a "void," which we should call fictitious, and, supported by English speculators, succeeded in raising prices to 200 frs. per 100 kilos. in Havre, and 78½ per ton in Liverpool. When this operation became known, and when it was evident that the copper was kept back, and that the quantity produced was not diminishing, prices fell back to 170 frs. in Havre, and 66½ 10s. in Liverpool.

At the end of 1868, when it was foreseen that the exports from Chili would not reach the amount of 1,000,000 cargas, a new speculation was organised in England, which raised prices to 78½, and kept them thus for three months, though paying an advance for distant delivery. This operation gave a premium of 2 to 3 per cent. to copper ("to be delivered") over copper on the spot, and spoiled the position of the article, as it presented "a future" to the producers, a future which in reality existed only in the imagination of the dealers. Even the concurrence of certain enthusiasts baffled its rise, and all illusions came down with prices. When the permanently increasing shipments became known, prices came back to 68½, in order to fall gradually to 68½, to rise to 67½, and to fluctuate between those two limits, about which our market trips without animation, not being able to withdraw from that narrow circle which presses it so close, and paralyses all its movements.

Different reasons for this strange position may be alleged. Your chief producers, deceived by the difference in prices between the "spot" copper and that for "future delivery," declined to realise their stocks, but consigned them to Europe for sale at limits much too high for practicable prices. A large number of speculators intended to resist, and founded their refusal to sell on what I think a mere apparition instead of a reality, and I believe that when your producers remained in so doubtful a position it was because they were subject to the same illusion. It is said that money is very cheap just now, 2½ to 3 per cent. in England, and 2½ per cent. in France; rent and warehouse charges would scarcely reach 5 per cent. The prices of 66½ and 68½ in Liverpool, and 178 to 275 frs. in Havre, represent the very lowest quotations ever known, so it would be of no use to sell now—patience is not costly.

Do you not see that this argument is only specious, and that a great danger is to be foreseen? Undoubtedly patience has often kept from certain ruin those who find strength and courage in it, but it is not true in an absolute way. The limits of prices between which copper is now moving, are they unchangeable? Are they out of reach of essential circumstances which determine production and consumption? Here are some facts:—

In 1867, Chili exported	Tons 45,345
In 1868, ditto	44,344
In 1869, ditto	55,500
The excess of 1869 over 1868 is thus	Tons 11,390

ditto 1869 over 1867 is thus	10,400
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Let us now compare the difference in stocks, reckoning merchandise at sea to Europe, and quantities in the ports of arrival. On Feb. 28 of the following year we have—

1868. 1869. 1870.		
11,910 ... 18,850 ... 25,304 slabs at Liverpool, Swansea, and Havre.		
11,900 ... 15,900 ... 14,720 slabs at sea.		
22,810 ... 29,750 ... 40,024		

With regard to production in 1869 there was an excess of 10,500 tons over 1868, and of 16,000 tons over 1867. The excess of the stock has thus only been caused by the increase of production in Chili. You know better than I do the cause of this increase. You also know what the year 1870 has in store for us. If it is equal to the preceding year we shall have at the end of it a stock of 52,000 tons. Consumption has not been augmented because the increase of stocks surpasses the increase of Chilean exports, and you will observe that from 1867 to 1869 there were circumstances which specially increased consumption, such as the fabrication of copper coins in the different parts of Europe, and the active demand caused by the non-accomplished modification of military equipments.

These are two great sources of consumption much missed at present. We miss also the continued and regular substitution of iron vessels for wooden ones, as the latter were covered with copper sheathing, which the former do not require; and if now the general pacification of all questions which have had the privilege of disturbing business, is the only way to activity and an increase of commerce, we have not to forget that the above-mentioned reasons are difficult to be realised, except by the aid that a general confidence can afford. On one hand we see *status quo* in consumption, on the other an increase of 20 per cent. in production in one year. Can the production be diminished, without loss to the miners, to the figures of the years 1867 and 1868? or has it to go the regular path shown now-a-days to all industry—to develop itself nearly indefinitely? This is the whole question, for there is one superior law, and this is the position between consumption and production; only between that we find stability in prices, and comparisons with the past are only delusions, if we do not look to that superior law. Patience is a cure; cheap money is a remedy which, instead of curing the evil merely prolongs it. If the production of 1870 is to be equal to 1869, our rates are too high, and must fall, till fresh consumers are brought forward, or till the equilibrium is re-established by the production being made more equal to the necessary quantity required.

Everything depends upon your producers. If their interest forces them to continue working the mines on the same basis as in 1869, they must renounce the idea of obtaining in future the prices paid at present; they must lower their limits of sale on their consignments, in order to manage the transition, and the situations now prepared for the article. In the other case, a great number of speculators (who will soon have a clear insight into matters) will make quotations threatening enough to those who have made advances, and whose fears in a critical hour will engender a panic. The large quantity which may be thrown upon the market in a single day will not find a counterpoise, and must provoke a fall in price, from which it will take a long time to recover.

In conclusion, I say the problem is to be solved by one of these conditions—either by a great decrease in production at the same rate of price, or by a continuation of shipments on the same scale

as in 1869, with slowly and gradually declining prices or fluctuations, according to the exigencies of the situation.

F. M.
Paris, March 2.

THE NEW COPPER PROCESS.

[From the New York "Engineering and Mining Journal."]

SIR.—The experiments on the new humid process for the extraction of copper from its ores, devised by Mr. James Douglas and myself, have been retarded by attempts to construct efficient lixiviating tubs. Those first put up at Harvey Hill did not permit a thorough agitation of their contents, and hence, though about 1 ton of copper was extracted in the first trials, the results were imperfect. We have now, however, arranged a plan of tanks with vertical stirrers, which promises to overcome the mechanical difficulties. Meanwhile we have made trials with a Freiberg barrel, with the following results:—The ores, dressed to about 20 per cent., and containing a considerable proportion of carbonates of lime and magnesia, were passed through a sieve of 40 meshes to the linear inch, and calcined at a low redheat, after which operation they held from 5 to 6 per cent. of copper as soluble sulphate, and the remainder as oxide. Charges of 3 cwt.s, and 4 cwt.s, of this were treated with the prescribed bath of protochloride of iron, previously heated to 212° Fahr., and after six hours' agitation in the revolving barrel the gangue was found to contain not more than 0½ per cent. of undissolved copper. From the solutions in several trials it was found that 100 parts of metallic iron threw down from 170 to 172 parts of pure cement copper. The precipitation is very rapid, in tanks, having the iron arranged on gratings at different levels, the liquid being kept hot by introducing a little steam. After 12 hours the solution, nearly freed from copper, is ready to treat a fresh portion of ore. The reaction in this process may be briefly stated as follows:—1. From the solution of protochloride of iron, oxide of copper precipitates oxide of iron, forming chlorides of copper. 2. From the chlorides of copper, metallic iron precipitates metallic copper and regenerates protochloride of iron. These two operations alternating with each other, the same bath, with certain precautions, may be used indefinitely.

In the above trials the amount of protochloride regenerated was found to be about 30 per cent. of that in the original bath. This deficiency, which is much less if air be carefully excluded, may, as we have explained, be supplied by the action of sulphurous acid on the precipitated iron oxide. By passing a current of this gas through the barrel during solution it has been found easy, on the large scale, to get a gain of 20 or even 50 per cent. of protosalts of iron in the regenerated bath, a result much beyond that desired—the maintenance of the original strength. Practically, the use of sulphurous fumes from the furnace in this way, as described in the British specification (published in your columns), has the disadvantage that the oxygen of the air always present, raises all the dichloride of copper to the state of protochloride, at the expense of a portion of decomposed protochloride of iron. It is only after this that the sulphurous acid reduces the suspended ferric oxide with formation of insoluble sulphite and soluble sulphate of iron. We, therefore, prefer a method described in the American specification, and inadvertently omitted in the English one, which consists in treating with sulphurous acid the insoluble residue from the solution of the oxide of copper. The turbid solution, being drawn rapidly off from the gangue, soon deposits its suspended iron oxide in a settling tank, from which the liquid is drawn to the precipitating tank containing scrap iron, while the deposit of iron oxide, retaining but a small portion of the copper solution, is separately treated with a current of sulphurous acid, and furnishes abundance of protosalts of iron to reinforce the bath as desired. The strength of this is determined by a titrated solution of permanganate. In a note to the printed specification sent you I have called attention to the power of cupric chloride to dissolve copper from copper-glance, purple ore, and regulus rich in copper. With copper pyrites, however, the action of the chloride of copper is but feeble, and only the iron of the double sulphide is attacked. This reaction of cupric chloride is analogous to that long since observed by Karsten, between chloride of copper and sulphide of silver. In fact, a solution holding cupric chloride with common salt chlorides and dissolves both silver sulphides and metallic silver, a reaction which lies at the basis of the old Spanish patio process for the extraction of silver from its ores. In the application of our new copper process to the ores of Eastern Canada, some of which contain portions of both gold and silver, we have taken advantage of this reaction, and have found that in the case of an argentiferous copper ore the silver is readily dissolved by our iron bath, from which it may be precipitated by filtration through spongy copper, as in the process of Augustin. Further trials, made with rich regulus containing gold, have shown what might be expected—that the residue, after the extraction of copper and silver by our bath, contains the gold in a condition favourable to removal by chlorination. We, therefore, anticipate the best results from the application of the new copper process to gold and silver-bearing copper ores like those of Colorado.

T. STERRY HUNT.

Montreal, March 14.

[For remainder of Original Correspondence, see this day's Supplement.]

Meetings of Mining Companies.

LINARES LEAD MINING COMPANY.

A general meeting of shareholders was held at the offices, Queen-street-place, on Thursday.—Mr. W. COX in the chair.

The report of the directors stated that the profit on the past half-year has amounted to \$2544. 14s. 9d., an improvement of 267. 13s. 7d. over the past half-year to June 30: indeed, it is the largest profit which the company has realised during the past seven years. In previous accounts the outlay on the Quintientos Mine has been treated as an expenditure of capital, but in the accounts now presented the whole of the company's expenditure of whatever kind has been charged against revenue, so that the profit shown is in every respect satisfactory. There has been no movement of any importance in the lead market during the whole of the half-year. The price stood at 18s. 7s. 6d. per ton in September, and has continued at that price ever since. Just now, however, the London market is, if anything, slightly weaker for Spanish lead. The profit of \$2544. 14s. 9d., added to the amount of undivided profit brought forward, brings up the sum standing to the credit of profit and loss account to \$102L 12s. 3d.; out of this amount the directors have declared a dividend, payable on April 9, which will consume 37s. 0d.; and they have again written off as depreciation on machinery, &c., the sum of 500L—4250L: leaving a balance to be carried forward of 3852L 12s. 2d.

The CHAIRMAN moved that the report and balance-sheet be received and adopted. It must be a matter of congratulation to the shareholders, as it was of satisfaction to the directors, that they were in position to perform the promise which, on the part of his colleagues, he made at the last meeting of declaring a dividend of 5s. per share, and it was now in his power to promise a similar dividend on September 29. The amount of profit realised during the past half-year was the largest this company derived for some time past, but beyond this they had expended not less than 3000L upon explorations. In the Quintientos Mine, where they had now 700 tons of ore in reserve, for his part he believed that they were now entering upon a new phase in this company, and that the explorations and discoveries now being made at this new Quintientos Mine would restore the Linares Company to its most palmy days.—MR. BRAND seconded the proposition.

MR. JOHN TAYLOR had watched this mine with great care and interest for many years. He believed if they were not backed up by the industry, economy, and zeal of their managing agent (Mr. Tonkin) they would not be able to realise the results as shown in the report. He believed the success of these three companies was due to the simple fact that a large outlay was continually being made in extending and renewing the underground works, hence it was that no diminution occurred in the "reserves" of ore in the different mines, while they were placed in a position to make good profits. He regarded all mines as terminable annuities, and it has always been his object to extend the time of termination to as long a period as possible. If the Quintientos Mine should continue to open out satisfactorily for the next six months it would to a great extent replace the results realised from the old mine.

The motion adopting the report and balance-sheet was put and carried.

The retiring directors and auditors were re-elected.

A vote of thanks to the Chairman and directors concluded the proceedings.

FORTUNA COMPANY.

A general meeting of shareholders was held at the offices, Queen-street-place, on Thursday.—Mr. W. COX in the chair.

The report of the directors stated that the profit for the half-year amounted to 4936L 2s. 2d., which, after providing 900L towards the redemption of the debenture debt, and charging 243L 12s. for debenture interest, enabled the directors to declare another dividend of 2s. per share. On Dec. 31 there were funds in hand amounting to 5625L 10s. 9d. towards the payment of the debenture debt. This provided for the third instalment of 3750L, which became due on Feb. 19, and was duly discharged on that day, and it has left 1875L 10s. 9d. in hand towards the final instalment of 3750L, due Feb. 19, 1871. The production of ore has been at the rate of 377 tons per month; this shows but a small variation on the previous six months. The total quantity of ore in reserve still

reaches 9250 tons; the quantities at the respective mines are, however, somewhat different to that reported in September, but a deficiency at the Caunaia Mine has been fully compensated by an increase at Salidos. In the former no new tribute ground of much importance has been opened during the past six months, but the mining agents believe that the present half-year will be more fruitful of discoveries. The Salidos Mine has opened out remarkably well during the whole of the half-year, and the prospects for the future are equally good.

The CHAIRMAN moved that the report and balance-sheet be received and adopted. He explained that the company was for years in great financial difficulties, and when once dividends were commenced and increased, it was always satisfactory to the directors to find that they could be maintained. Some years since they were compelled to borrow 15,000L upon debentures, the whole of which had been paid out of profits, in addition to the dividends which had been paid to the shareholders. They had now only 3750L to extinguish, the whole of the debentures, of which 800L had been already redeemed. He looked forward to the day, if the mine maintained its position, when the directors would be able to declare much larger dividends than 2s. per share.—MR. PEILL seconded the proposition.

MR. JOHN TAYLOR explained the position and prospects of the different mines, stating that they were amply provided with machinery. There had been a considerable outlay of revenue in opening the mines, in order to maintain the returns; and he might say that the concern was in a very satisfactory condition.

The motion adopting the report and accounts was put and carried.

The retiring director was re-elected, and Mr. Peill was elected director.

A vote of thanks was passed to the Chairman and directors, which concluded the proceedings.

ALAMILLOS COMPANY.

A general meeting of shareholders was held at the offices, Queen-street-place, on Thursday.—Mr. J. P. JUDD in the chair.

The report of the directors stated that no very important discoveries have been made since last meeting, but the mines have continued to yield a good return of lead ore, and promise for the present half-year an equally favourable result. The raisings of lead ore have amounted to 1450 tons, an increase of 80 tons over the previous six months, and it is satisfactory to find that the superintendent has been enabled to return this quantity without diminishing the ore in reserve. The result shown on the six months' working amounts to 4932L 4s.; this is a larger sum than the company has made in any previous half-year, and is especially satisfactory in view of the low prices which have been obtainable for pig-lead. The amount standing to the credit of the profit and loss account has again enabled the directors to declare a dividend of 2s. per share, and to write off 400L from the account, 1s. outlay on mine works.

The CHAIRMAN moved that the report and balance-sheet be received and adopted. The only feature that really required one moment's consideration was the fact that the deeper levels were hardly so productive as formerly. There was, however, a vast quantity of ground to explore, and there was every prospect that the results of the current half-year would be equal to the past. The mine, on the whole, was going on most prosperously. The directors had been able to declare a dividend, and there certainly was no reason to suppose that they would not be able to declare another in the autumn. Everything, however, depended on the price of lead.

MR. BRAND seconded the proposition.

A SHAREHOLDER drew attention to the mines' cost and smelting charges. MR. JOHN TAYLOR explained that the smelting charges were less than they had been, while the mine's cost was remarkably low. He was sure the mine was worked with every economy. It was to be remembered that everything had to be charged against revenue. He had placed his faith in this mine upon its extent, there being ground sufficient to give them returns for many years to come, even if the ore did not extend in depth, which at present was a problem. He looked forward to their being able to maintain sufficient returns to leave a large profit. In other words, to maintain their profits and keep up the reserves.

The motion adopting the report and balance-sheet was then put and carried unanimously.

A vote of thanks to the Chairman and directors concluded the proceedings.

LUSITANIAN MINING COMPANY.

The sixteenth annual general meeting of shareholders was held at the offices, Queen-street-place, on Thursday,

Cornwall and Devon offering the best evidence of such being the case. Mr. Hitchins concludes his report by stating that the mine only requires development—in other words, the sinking of the shaft, already down 8 fms.—to realise the very good opinion that he has of it.

The report of Capt. Neill was read, as follows:—

April 5.—This sett is very extensive, being from 700 to 800 fathoms from east to west, and about 600 fathoms in width, and embraces four known east and west copper lodes, and also three cross-courses, the western one and the main one, being the same that pass through the Devon Great Consols, Old Gunnislake, and other mines that have made profits in the district. In coextending the western part of our sett we open on the No. 4, or south lode, the lode being 9 ft. wide, and underlying from 2 ft. 6 in. to 3 ft. in a fathom north, composed of capel and gossan of the finest description for the production of copper ore, and embedded in a beautiful light killas for the production of mineral, and also having a lode about 5 fathoms north of the main one, and not underlying so fast north, consequently will form a junction of about 15 fms. deep with the main lode. We have commenced a new engine-shaft about 7 fathoms north of the main lode, the shaft being 12 ft. long, 6 ft. wide, and about 8 fms. deep, and according to the underlie of the lode at surface it will be reached at about 7 fms. deeper. From the indications at surface it is my opinion, as well as that of some of the most practical men of the two counties, that it cannot fail to produce large quantities of copper ore at no great depth. We are sinking with a full pare of men, to accomplish this object as soon as possible. We anticipate cutting the lodes without the aid of any engine, but should recommend that during the summer months the necessary buildings, such as engine-house, smiths' shop, &c., be erected for the proper development of the mine. It is my opinion that by a small outlay this mine will prove to be a successful undertaking.—THOMAS NEILL.

Mr. JOSIAH HITCHINS explained that he never expected to see such an extraordinary true gossan formation. He confessed he had seldom seen such a powerful outburst of gossan. True gossan represented copper there must be a very large body of copper at no great depth. His opinion was that it did represent a copper formation, but at what depth the copper would be reached he could not say, but he thought the trial now going on would certainly lead to some value.

Mr. WADDINGTON personally felt under a very great obligation to Mr. Pearce and Capt. Neill for having introduced this property to the notice of those who were now associated with it. What Mr. Hitchins had indicated in his report was fully corroborated in numberless instances. They saw what parallel lodes under the influence of the same cross-course had done in that as well as other districts, and he believed that Harewood Consols, where there was a lode of such unusual size, could not fail to produce a large deposit of mineral at a very shallow depth. He was quite willing to follow the judgment of such men as Capt. Neill, Capt. Gregory, and Capt. Rowe, and he thought an inexpensive development would open up a really good mine.

Mr. WILSON stated that when in Cornwall a few days since he did not fail to make every enquiry with regard to the mine, and the general opinion was that it would open out a really valuable property at no great depth.

Mr. HITCHINS, in acknowledging a vote of thanks for his report, stated that if there was a large deposit of copper belonging to that gossan he was quite sure they would not have to go very deep for it. That opinion was based upon experience, and could be supported by many instances, such as Great Crinnis, Old Crownside, and Devon Great Consols—in the latter case Wheal Fanny was worked up to surface. The stronger the mineral formation, the nearer the ore made up to surface at particular points.

After some further discussion, it was agreed that a call of 1s. per share be made. Messrs. Pearce, Waddington, and Coath were appointed the committee of management, Mr. F. R. Wilson secretary, and Capt. Neill managing agent.

A vote of thanks to the Chairman concluded the proceedings.

GREAT WEST CHIVERTON MINING COMPANY.

The first ordinary meeting of shareholders, required by Act of Parliament to be held within four months after registration, took place on Wednesday, at the company's office, Dowgate-hill, Cannon-street,

Mr. HARRY BROWN (Chairman) in the chair.

The principal object for which the Legislature appears to have instituted a meeting at this early stage of the existence of a public company—the appointment by the shareholders generally of an independent auditor—was carried out by the election to this office of Messrs. Norfolk and Yalden, public accountants and auditors, of 11, Coleman-street, E.C.; after which the Chairman and the managing director (Mr. S. H. Armitage) explained to the meeting that though the time since the registration of the company was only four months much work had already been executed at the mine. Of five known east and west and two north and south lodes operations had been carried on on two east and west lodes simultaneously, shafts and winzes sunk, and levels driven on the course of them. A 14 fm. level, on No. 1 lode, has been driven a considerable distance westward. In the end there are now two branches approaching each other, and at their junction, in about 2 fms. distance, a great improvement for lead may be looked for. An up-cropping in the bottom of the level of good silver-lead ore has been gone over for a length of upwards of 15 fms., which it is expected will be met with at a greater depth for probably a greater length, as a good course of ore. To reach this the shaft has already been sunk 10% fms., and is completed for commencing the driving of a 24 fm. level, which it is calculated will, in about three months, reach the course of ore gone down from the 14, and which from the celebrated character of the district, and the favourable composition of the lode, promises to prove a source of great profit. Another point of great promise is the bottom of the winze, now nearly 10 fms. under the adit of No. 3 lode, whence the captain, according to a note received on the morning of the meeting, took a fair sample of the average contents of the lode, and found it to contain about 33 per cent. of good lead. The company is provided with a steam-engine of small size, but sufficient power to sink the shaft to a 24 and 44 fathom level, which at about the centre of the sett would give backs of fully 65 fms.

Referring to finances, it was explained that all applications for a less number than ten shares had been declined, and the money paid on them returned; and that the directors deemed it most expedient for all interests to allot only a sufficient number of shares to provide funds for the attainment of the objects principally aimed at by them, reserving a number of shares to be hereafter offered *pro rata* to all the original shareholders, when the shares will, no doubt, command a considerable premium.

The shareholders separated with the usual complimentary recognition of the attention paid to them, and evidently highly pleased with the explanations given to them.

ADVERTISEMENTS.

From Mr. EDWARD COOKE:—During the past few weeks semi-public has existed on the Stock Exchange in the shares of the various mines that have been so rapidly introduced by the members of that institution. That a collapse would take place must have been apparent to the most casual observer, seeing that shares were forced up to ridiculously high prices, while the mines they represented were as yet almost in embryo. It is but fair to the Mining Exchange to say that the operations of its members in the various new mining companies have been of a very limited character. It would be invidious to mention the mines alluded to in a public journal. From what may be gathered as to the causes of the sudden break down in prices, the principal one appears to be attributable to the members of the Stock Exchange. In their eagerness to get rich, like a few of their more fortunate peers, very many of them left their usual occupations—the railway, bank, foreign, and other stock markets—and rushed recklessly into dealing in mining shares, without ever troubling themselves to make enquiries into the nature or merits of the respective concerns they were dealing in. Hence they found themselves on the fortnightly settling-days laden with a burden they could not sustain. Sell and get out at any price was the order of the day, and consequently heavy losses to these impudent speculators. In this downward movement the very best mines that were ever brought before the public have participated. Even the shares in the VAN MINE have received some 70 to 80 per share, and in TANKERVILLE to a similar extent. The public will do well not to place this last-named mine on an equality with even the very best of the several mines that have been brought out during the past nine months. Without desiring to disparage any particular property, I say, without fear of contradiction, that the Tankerville is without a parallel among the many new mines now before the public. Already the returns of lead are 100 tons per month, which will leave a large monthly profit. When the new engine is erected it is by no means improbable the returns will be increased to 250 or 300 tons per month. It may be said that the shares are at a very high price. I would, however, remind readers of the Journal that a lode such as this mine contains justify a high price for the shares. Those who know the mine best are not selling their shares, but, on the contrary, are buying, and entertain the most confident opinion that it will be one of the most productive mines in that great lead-producing district. I would just remark that if Bwch Consols and such promising mines with lodes producing 1 to 2 tons of lead per fathom give profits to the shareholders, what may be expected from the extraordinary lode in Tankerville, producing, as it does, upwards of 30 tons of lead per fathom. This is only one of the several lodes that this fine property contains. Let the speculative holders sell their shares, but my advice (to those who want a good investment, with a great probability of doubling their capital in less than 12 months) is to buy Tan'kerville at once. Those who have a desire to know something about WEST TANKERVILLE may obtain a report by sending me two postage stamps. Notwithstanding the decline in the price of the shares, my advice still is to buy them. There is a capital of \$6000. in hand after paying for the mine, with engine, and a large quantity of work done that must have cost many thousands of pounds. The shares are free from any further liability, as they are fully paid to \$1. A very good improvement is reported to have taken place in the shaft at GREAT ROCK MINE, indicating that only depth is required to make this a productive mine: 25 tons of lead has been sampled this week.

From Mr. JAMES CROFTS:—Activity has again prevailed in the Mining Market during the past fortnight, but more particularly in the stock, the favourable result of the Banca sale having caused an immediate advance in the price of that metal. The comparatively small amount offered for sale, and the excellent price realised, together with the ever-increasing demand for tin, have combined to make the present state of the trade a most excellent one; and it is also particularly cheering to note that the advances are not caused by speculative influences, and price will, therefore, undoubtedly still further advance. EAST LOVELL shares have fluctuated considerably. It was last reported that the lode in the winze, which had been valued at 10000. per fathom, had fallen off considerably, and the shares fell to 25. It was found that the value of the winze had become reduced but as the end which is being driven under this winze was reported to be as good as ever it rally occurred in the shares, and they rose to 24, 25; they now close 24½ to 25½. At the meeting, held on Thursday, a dividend of 2½ per share was declared; this is at the rate of 35 per cent. per annum on the present value of the shares. TINCROFT continue to maintain a high price, and are now quoted 28 to 30; this is a further advance, and the shares close very firm. GREAT VOR have also advanced; the present quotations—11½ to 12½—show a rise of at least 20% since the meeting. PROVIDENCE also show a rise, and are very scarce at the quotation of 35, 41. This mine offers a first-class investment. Most other tin mines have advanced, and there will apparently be a very great demand for all classes of tin stock.

The ROCHE CONSOLS TIN MINE is an adventure that has lately been taken

up. It is situated in the parish of Roche, Cornwall, and is divided into 3000 shares. The district is a splendid one, and has given birth to some of our most celebrated mines. The geological formation of the district is killas, and it is near the junction of the granite, which is the most productive ground for tin ores, four-fifths of the rich mines in Cornwall being similarly situated. An eleven course 12 fms. wide runs through the sett, and it is intersected by a great many lodes; and it is at these junctions that large quantities of tin are found. One lode which is now being driven upon is worth 30 lbs. of tin to the ton of the lode, and will yield large profits. The supply of rich tin-stuff is immense, and a steam-engine and stamps will be erected, so that regular returns will be made at once, which will yield excellent profits to the shareholders. There are now some thousands of tons of tin-stuff at surface, left by the ancient workers, which will also pay well for stamping. The shares at present are 10s., but they must advance, and the investor would do well to secure shares whilst they can be had at such a low price. The mine is an excellent one, and is of undoubted value, and cannot fail to give handsome dividends to the shareholders.

MINING NOTABILIA.

[EXTRACTS FROM OUR MINING CORRESPONDENCE.]

During the past week Mr. GEORGE HENWOOD has been on a tour of inspection in the Carnarvonshire copper and lead mining district; in the ensuing week he visits the Cardiganshire localities, immediately after which he proceeds to Cornwall to set the South St. Just Mine to work. Letters addressed to his residence, 24, Sandringham-road West, Stoke Newington, will be forwarded.

WHEAL ARCHER (Camelford).—The monster water-wheel which has for several months been in course of erection was set to work, but unfortunately after the wheel had gone round only a few times from 50 to 60 feet of the water ladder suddenly broke down. Some days must, therefore, elapse before the wheel can be got to work again. This is one of the largest water-wheels in the county.

DRAKE WALLS is looking well, and in May will, it is expected, pay the usual dividend of 20 per cent.

WHEAL ARTHUR (Gunnislake) is still looking well, and active operations will soon begin for the new machinery, which will enable them to sell large quantities of tin.

REPERBY MINE.—The prospects here are considered more encouraging than ever, and all the miners near the district are delighted at the probability of a living for many years to come. Last week an unbroken part of the lode was brought to surface 12 in. square, 4½ in. thick, and weighing 70 lbs. The lode averages quite this in the bottom of the 15 fm. level west, and about half as rich east. The sale for last month was 2 tons, which realised a profit on works of nearly 30%, and this in one month from four heads of stamps. Was such thing ever done before in Cornwall? A meeting of the shareholders, who are all men of good standing, was held at Torquay on Tuesday, when the directors' resolution was voted—consequently, a 30-in. engine has been purchased, and contracts are out for the remainder of the works. Investors may now be inclined to believe, after all, there is no country like Cornwall for mining.

TEIGN VALLEY LEAD AND BARYTES MINES.—Can any reader inform me if the Teign Valley Railway has a station near these mines, which are now about to be worked? Being an intending shareholder, I shall be glad of this or any other information you can give me.

OLD WHEAL RUSSELL is looking much better. There are 62 tons of ore for sale. The lode in the rise of the shaft is composed of yellow ore. In the sinking of the shaft, which is 11 fms. deep, the lode is composed of gossan and ore. Altogether the mine is promising for a good one, which the patient shareholders well deserve.

BLAEN CAELAN.—This mine (now known as the "Cardiganshire Van") continues to open out in a most satisfactory manner. The ore ground is yet unproved in width, but still rich. It continues to extend itself east, and now exceeds 21½ fathoms, worth 80%—that is, 6 tons of lead for proved width per fathom run.

CHIVERTON WHEAL VIRGIN is situated in the parish of Kenwyn, about four miles north of Truro, and comprises five large champion lodes, varying from 6 to 10 ft. wide. An adit level has been driven 18 fms. on the course of the lodes, and in a further drivage of 15 fms. from this point the lodes will form a junction with the east and west lodes, and cut the blue ground, where there is no doubt a good body of ore will be met with, as the stratum is highly mineralised. The mine is divided into 3000 shares, and worked on the Cost-book System. The shares are principally held by highly influential parties in Cornwall, as well as in town. The Chiverton, Perran Wheal Virgin, and South Garris lodes run through this sett.

NORTH POOL.—The discovery at this mine in the 40, from Ballarat shaft, may be considered of great importance.

GORSEDD AND CELYN LEVEL.—Operations commence at these mines next week, and it is the opinion of all practical authorities that a great and important success will result.

TREVEDDOE.—The samples of grey copper sent up last week from the mine have been assayed, and found to produce 42% per cent. for copper, and 74 ozs. 13 dwts. 8 grs. of silver. The captains may congratulate themselves that the energy and perseverance of Captain Rouse have enabled him to prove that his confidence in the mine was based upon a good foundation.

WEST STIPERSTONES.—In the report of Capt. Wm. Williams, of Van, the West Stiperstones sett is described as very extensive, and among the lodes traversing it are—the Roman Gravels, Pennerley, and Old Bog, which in those mines have proved very productive. At the adit level of the engine-shaft some 35 to 40 fms. three lodes will be intersected, which in the Pennerley Mines have been and are proving very rich for lead. Capt. Williams advises that the adit level on the Roman Gravels vein should be driven to intersect the Pennerley lodes, and that an engine-shaft should be sunk east of the Roman Gravels lode, and a cross-cut put out to intersect it at a depth of 10 or 12 fms. below the adit. Capt. Williams, with his characteristic caution, states "from the indications seen in the adit, he has no doubt that the mine will commence to make returns." Capt. Arthur Waters, the manager of Tankerville, states that he has had a very high opinion of the sett for years, and believes that 10000. judiciously expended will lay open a profitable mine. It may be added that there is a working capital of \$6000., and that the shares are fully paid-up.

VAN CONSOLS.—The large wheel is now complete, and will commence working in the course of next week. This wheel will unwater Gundry's shaft, and command the operations of the eastern ground nearest the Van.

THE CORNISH MINE SHARE MARKET has been active during the week for tin stock, and a large business transacted, principally for investment, consequent on the Banca sale having gone off well, indeed above the general expectations, and the quick action of the smelters in responding to the upward movement in the market, by advancing the Standards for the ores on Monday last. It seems now to be generally thought that good, if not better, prices will be obtained for some time to come. The recent failures by rash speculation in the Welsh lead mines (many of which have lately commanded fabulous prices), will check the tendency in that direction, and capital, by the inducement of good prospects held out by our tin mines at present, will, no doubt, again flow freely into Cornwall, and is not likely to be attended with such disastrous results if a careful and judicious selection of mines be invested in.

A well-informed correspondent writes:—"Two of the most successful mines in Cornwall are Dolcoath and Tincroft, and yet the financial position of both these mines is in an eminently unsatisfactory state. Debts to one period, credits to another, hundreds of pounds paid every year for interest,

and rushed recklessly into dealing in mining shares, without ever troubling themselves to make enquiries into the nature or merits of the respective concerns they were dealing in. Hence they found themselves on the fortnightly settling-days laden with a burden they could not sustain.

Sell and get out at any price was the order of the day, and consequently heavy losses to these impudent speculators. In this downward movement the very best mines that were ever brought before the public have participated. Even the shares in the VAN MINE have received some 70 to 80 per share, and in TANKERVILLE to a similar extent.

The public will do well not to place this last-named mine on an equality with even the very best of the several mines that have been brought out during the past nine months. Without desiring to disparage any particular property, I say, without fear of contradiction, that the Tankerville is without a parallel among the many new mines now before the public.

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THE NEW VADE MECUM (invented and manufactured by Charles H. Vincent, optician, of 23, Windsor-street, Liverpool) consists of a telescope we 1 adapted for tourists, &c., to which is added an excellent microscope of great power and first-class definition, quite equal to toothers sold at ten times the price.

Wonderful as it may seem, the price of this ingenious combination is only 3s. 6d.

and Mr. Vincent sends it (carriage free) anywhere, with printed directions, upon receipt of Post Office order, or stamp, to the amount of 3s. 10d.

HOLLOWAY'S OINTMENT AND PILLS.—Glandular swelling in the throat, neuralgia, tic-doloroux, rheumatism, gout, lumbago, and other diseases affecting the glands, muscles, and nerves of sensation, are permanently eradicated by this healing, anti-febrile and soothing preparation. It is also a perfect remedy for all skin diseases, and every kind of superficial inflammation; they soon lose their anxiety and painful character under the cooling, corrective, and healing influences of this invaluable ointment. The pills have never been administered, either by ho-pital or private practitioners, in dyspepsia, & liver complaint without producing the desired results. Holloway's remedies act well in union, and together are competent to grapple successfully with the majority of mortal maladies, regardless of situation.

MINING IN COLORADO.

The formation, in England, of a company with an adequate capital (125,000.) for the purpose of acquiring a mining property on the celebrated silver lode known as the "Terrible Lode," has naturally caused some interest to be felt in the ores produced in this district. The strike of the Terrible Mine is about north 61° east, the vein being perpendicular from surface to a depth of about 16 or 17 fms., and then dipping at an angle of some 12°. The lode varies in width from 4 to 7 ft., and, compared with the granite of the country, is soft and favourable for working, the gangue consisting of decomposed quartz and felspar, with a little white mica. The walls are composed of hard, solid, grey granite.

The vein of solid ore in some cases reaches 2 ft. in thickness, averaging about 10 in.; and the ores consist of zinc blende, gal

Great Fron Fownog Consolidated Lead MINING COMPANY (LIMITED).

Incorporated under the Companies Acts, 1862 and 1867, which limit the liability of each shareholder to the amount of his shares.

CAPITAL £20,000, IN 4000 SHARES OF £5 EACH.

10s. on application, 10s. on allotment, and £4 by calls of not exceeding 10s. each, quarterly, if required.

DIRECTORS.

DAVID DAVIES, Esq. (CHAIRMAN), No. 51, Catherine-street, Liverpool.

JOHN WILLIAMS, Esq., 13, Bently-road, Princes-park, Liverpool.

EDWARD RIGBY, Esq., 205, London-road, Liverpool.

JOHN S. DE WOLF, Jun., Esq., Clifton-park, Birkenhead.

ALLEN GREEN, Esq., Green-lane, Rock Ferry, Cheshire.

ROBERT YATES, Esq., Bradshaw-gate, Bolton.

ROBERT LOMAX, Esq., 73, Manchester-road, Bolton.

(With power to add to their number.)

BANKERS—NORTH AND SOUTH WALES BANK, AND BRANCHES.

AGENTS—LONDON AND WESTMINSTER BANK, Lothbury, London.

SOLICITOR—R. J. JONES, Esq., 5, Harrington-street, Liverpool.

MANAGER—Captain WILLIAM WASLEY, Fron Fownog, near Mold.

SECRETARY—E. J. HALE, Esq.

OFFICE,—ARVON CHAMBERS, 9, CANNING PLACE, LIVERPOOL.

PROSPECTUS.

This company is established to work and effectually develop the valuable lead mining property consisting of Summer Hill and Fron Fownog Mines, and adjoining lands (situate in the parish of Hendrebiwa, near Mold, in the county of Flint), which have already been laid open, and proved to a considerable extent, indeed sufficiently so to justify as an investment the purchase and expenditure of about £9000, and which, it is confidently expected, will lay open paying ground sufficiently extensive to dispense with further calls, and establish a permanent dividend-paying property.

The directors have, therefore, much confidence in introducing this enterprise to the notice of their friends and the public, having effected the purchase of the entire property, including the Summer Hill Mine, for a sum of £5000—2000 shares half paid up—thus showing the great confidence of the lessors, as well as the directors, in the future of the undertaking. The total area of the ground is very extensive (above 200 acres), and the grants extend over a period of 21 years, at a royalty of 1½d. The facilities for working are much more favourable than similar undertakings.

Upwards of £3000 worth of lead was raised at the Summer Hill Mine between January, 1866, and December, 1868, and £1200 was paid in dividends. A new shaft has been sunk, and the flat reached, from which it is expected that fresh runs of ore will soon be discovered.

Mining Correspondence.

BRITISH MINES.

ABERDAUNANT.—John Roberts, April 6: We have completed the tramway in the No. 2 adit, and resumed driving the end, which is now producing good stones of lead. In the winze below the 10 we have a very rich branch of lead, from 3 to 4 in. wide, and ore deciminated throughout the lode. I have commenced to drive from the winze towards the No. 3 adit end. On account of the lode being so large we have yet about 6 fathoms more to drive to communicate with these two ends, which will take nearly a month to do, but if the lode continues as good as it is now in the winze, we shall be extracting lead the whole of the time. The deep level on the eastern side is getting now into more settled ground, the flookan is of a beautiful character, and producing some good stones of lead. The farther we go the more I am confirmed in the belief that we have a good lode before us and in depth. We have nearly finished the water-course which will bring the main stream to the wheel, and will supply us with sufficient water for the whole of the season, unless an extraordinary drought takes place.

BALLACORKISH.—M. Gross, March 31: The appearances of the lode in the adit forebreast continue much as usual; it is about 2 feet wide, and composed of a rich-looking gossan, capel, sugar-spar, and decomposed schist, with occasional stones of carbonate of lead and blende, and also letting out a heavy flow of water. In fact, nothing can look more promising, and there cannot be a doubt but there are immense deposits of ore belonging to this lode, which will shortly be brought to light. The lode in the new pitch north of No. 1 is looking pretty fair, and will yield, on an average, about 12 cwt. of lead and 10 cwt. of blende to the fathom. The lode in No. 3 pitch is at present poor. We shall open out some new stopes towards the adit forebreast, which I expect will turn out well, as there is good ore to begin with. Nothing particular to report in the 12; the men are making good progress with the drivage. I calculate it will take about three months more before the great east and west lode is intersected, unless, indeed, the underlie is quicker at this point than at the adit above. In this case it will occupy less time. The ground in the engine-shaft consists of a hard blue killas rock with large boulders of quartz embedded in it. At the same time, the men are making pretty fair progress with the sinking, and are at the present time being 2 feet below the 24.

BEDFORD CONSOLS.—Capt. Mitchell, April 6: Saturday last being our pay and setting, the following bargains were set:—The middle adit level to drive east of the air-shaft, on the Gwion lode, at 77. per fathom, 1 fathom stent, the men to tram their own stuff, and the cutting through the lode to be taken into consideration. The cross-cut to drive towards the engine-shaft lode, at 12d. per fathom, 1 fathom stent, or cut through the lode, and to tram their own stuff. The water still continues to flow freely from the back of the end, and I hope the lode will soon be met with.

BEDFORD UNITED.—J. Phillips, April 7: We are driving by the side of the lode east and west at the 10s. The lode in the 90 west is still 4 feet wide, and worth about 3 tons of ore per fathom: the stope in the bottom of this level is producing 4 tons of ore per fathom. The stopes in the bottom of this level east are worth from 4 to 5 tons of ore per fathom. The lode in the 75 east is 3½ ft. wide, worth 5 tons of ore per fathom. The stopes in this level average 4 tons of ore per fathom.

BLAEN CAELAN.—John Evans, April 6: The lode in the adit, east of shaft, produces 1½ ton of lead ore per fathom. The cross-cut south of this level is still in the lode, and there is no sign yet of the footwall; the ground is hard and short to cut, consequently the men are making slower progress. The men engaged in cutting the ground in the adit, for the engine are now taking down the old pass, which I hope will be done by the end of the week. I have also put men in the 10 fathom level to prepare for commencing a cross-cut south as directed, but we shall not be able to make much progress with this until we get the steam-engine in place to keep the lower level dry with regularity. No change in the adit end north, ground precisely of the same character, with flyers of spar across the face.

BLUE HILLS.—N. Bennetts, J. Andrews, April 2: The ground in the 66, north of Letcher's, is slightly easier than it has been, but no sign of lode as yet. The lode in the 63 east is large and promising, and containing some good tin-stuff, which we will think increase in value as it leaves the gossan. In the 50 east it is also large, and worth 6d. per fathom. The Wheal Betsey lode, in the 13 east, is 2 ft. wide, and worth 7d. per fathom. The shaft below the adit, on Claridge's lode, is progressing satisfactorily; the lode, however, is become more perpendicular, and, consequently, has not been broken since setting day.

BRONFLYD.—T. Kemp, April 6: As stated in last week's report, all shafts, levels, winzes, &c., will be in future described as of their actual depth below the adit level.—Settings for April: No. 3 Shaft, North Lode: six men to cross-cut the level north from shaft in the 56 (late 64), at 15d. per fathom; the lode continues without change, producing a little lead; we shall continue this cross-cut until we reach the north wall of the lode, and then turn west on our course. The winze to the west of shaft below the 45 (late 73) is down nearly 8 fathoms; and owing to the water being too heavy to draw with barrels, I have thought it advisable to suspend the further sinking until the men have cleared out this point, when we can soon put up a rise from the back of that level and communicate with the winze. The men from this winze are employed in stopping the north part of the lode in the 45, to the west of shaft, where it is worth 25 cwt. of ore per cubic fathom. Two men to drive the 45 fm. level end east, on the north part of the lode, at 10s. per fathom; lode producing a little lead. Twelve men to stop the lode under the 34 (late 62), at 70s. per fathom; lode worth about 35 cwt. of lead ore per cubic fathom. Six men to stop the lode under the 24 (late 52); lode worth 1½ ton of ore per cubic fathom. The tribute pitch in the back of the 34 (late 62) will not be re-set until the men have cleared out their ore from the level. Owing to the soft nature of the ground in the 12 west (late 40), we have taken the men from the cross-cut and put them to timber the level.—No. 1 Shaft, South Lode: This shaft is in regular course of sinking below the 10 in favourable ground, but the water is very much on the increase, and there is now over 60 barrels to draw in eight hours.

CAE GYNON.—April 7: North Lode: In the 50, we are only carrying a part of the lode, and shall take down the remaining part, which is 6 ft. wide, some time next week. No. 2 winze, below the 40, is still going down in a good ore lode, worth about 2 tons of lead ore per fm. In the 40, west of shaft, the lode is still unsettled, showing nice branches of ore occasionally. We cannot expect much improvement in this end until we get through the cross-courses, and in more settled ground. The stopes below the 30, west of No. 2 winze, is producing about 18 cwt. of lead ore per fathom.—South Lode: In the 50, west of shaft, we have taken down the lode nearly close to the end, and it is upwards of 6 ft. wide, nearly all solid blende, spotted with lead ore. The south wall is still going off, and the north one going about east and west; and, from present appearance, it is likely to become much wider as we drive westward. Should this lode produce lead instead of blende, it would be one of the richest lodes in Wales.

CALDBECK FELLS.—P. Hawke, R. Trevarthen, April 6: We have nothing new to report in connection with Lainton's engine-shaft, but to intimate that it will be speedily completed 20 fathoms below the deep adit. We continue to hasten the cross-cut north from said shaft, in the 20, to the Silver Gill lode, with all possible dispatch, and expect to cut it shortly. This applies also to the cross-cut in this level south to the great south lode; dispatch here is an object with us, and to these points we particularly direct our attention.—Junction Shaft: There is no change west in the 10, on the north lode, since our last report. We intend to clear down the mineral-bearing portion of the said lode east in the 10 in a few days. We shall also cut into the leader part of the caunter lode south-east in the 10 early in the coming week. We have nearly completed the junction shaft 20 fathoms below the deep adit. The north lode has increased in value, and is now worth fully 3 tons of rich blue lead per fm. All dispatch possible is being made on the dressing-floor, which will shortly be in full operation.

DEEP LEVEL.—April 7: The lode in the 146 is about 14 inches wide, composed of limestone, spar, and a little tin; the end is hard and wet, and very spar for driving. In the 142 fm. level end, driving west, no lode has been taken down since last reported. The winze we commenced sinking below the 142 is suspended, as we find we cannot sink for the quantity of water. In the stopes in the bottom of the 130, east of No. 1 winze, the tin part of the lode is 7 feet wide, and worth 18d. per fathom. In the stopes in bottom of the same level, west of No. 2 winze, the lode is from 12 to 14 feet wide, and is yielding some very good work for tin, and worth for the width of the lode 30d. per fathom. In the stopes in the back of the 130, west of the winze, the lode is 12 ft. wide, and worth 14d. per fathom. The lode in the stopes in the back of the same level, east of the 130, is 12 feet wide, and producing low-quality tin-stuff, worth 10d. per fathom. We have commenced driving the 117, east of Walker's shaft, in the killas by the side of the lode. In the 105 fm. level end, driving east of the shaft, we are also driving in the killas under the lode; the ground is favourable.

DEEP LEVEL.—April 7: The lode in the deep level, south-west on the deep vein, is about 14 inches wide, composed of limestone, spar, and a little tin; the end is hard and wet, and very spar for driving. In the 204, west of Eyston's shaft, on Pant-y-Go vein, the lode is 12 in. wide, consisting of limestone, spar, and clay, and showing strong spots of lead ore. The ground here is not quite so hard as it was; there is a long extent of whole ground still in advance of this level. The winze sinking below the 146 yards level at a point about 80 yards south of north shaft, on Pant-y-Ffrith vein, is now down 10 yards below the level; we are now sinking in whole ground; the old workings extend about 8 yards below the level. The part of the lode that we are sinking in for about 4 ft. wide is composed of clay and limestone, producing occasionally stones of lead ore. We propose sinking this winze about 20 yards below the level, and then drive off a level north and south, to prove the lode below the old workings; the ground is favourable for exploring. The lode in the 146, north of north shaft, on Pant-y-Ffrith vein, is about 2 ft. wide, principally spar, and containing spots of lead ore—a promising vein. We have dressed up the tributary work, which has turned out badly. Thirty-six men on tribute raised 7 tons 12 cwt. 3 qrs. of ore. We have a little stock of halvan ore, and shall be able to sell 10 tons at the Holywell sale this day week.

DOLWEN.—J. Davis, April 7: The lode continues very promising, and now produces a small but well-defined branch of lead ore. I yet expect further improvement as the end gets forward into more settled ground.

EAST CARN BREA.—John Rodda, April 6: We shall commence to take down the lode in Thomas's engine-shaft this afternoon, and shall take down the lode in the 100 fm. level ends this week.—No. 6 Lode: The lode in the 80, west of Buckley's shaft, has improved, and now worth 2½ tons of ore per fathom. In this level east the lode is 2 ft. wide, composed of quartz, peat, fluor-spar, manganite, and ore, worth 1 ton of the latter per fathom, and looking very promising to improve as we get away from the cross-course. No other change.

EAST PROVIDENCE.—J. Nancarrow, Wm. White, April 2: The following work was set to-day:—The 134 to drive north, by six men, at 71.10s. per fathom; the lode has a better appearance than last month. The 134 to drive south, by six men, at 6s. 6d. per fathom; the lode is composed chiefly of chlorite and spar. The 122 to drive north, by six men, at 71. per fathom; the lode is greatly improved in appearance, is letting out water freely, yields rich stones of tin, and is likely to become very valuable. The 122 to drive south, by four men, at 5s. per fathom; the lode is large, and yields more tin than in any place since we began the driving. The 70 to drive east, by four men, at 8s. per fathom; the lode is small. The 122 to drive east on the Standard, by two men, at 5s. per fathom. The 60 to drive east on the caunter, by four men, at 8s. per fathom; here, too, we have an improvement, the lode yields splendid stones of tin, which is very important, as it is going into whole ground. We have also six pitches to twelve men, at 9s. 6d. in 11. It will be seen by this report that the mine looks much better.

EAST WHEAL GRENVILLE.—G. R. Odgers, Wm. Bennett, April 2: The lode in the 120 is without change. The cross-cut at this level is driven 8½ fm.; the ground is getting very wet, and looks as if we were nearing a lode. The 110 fm. level cross-cut is driven 14 fm. 5 ft., or about 7 ft. behind the point at which we calculate the lode may be met with. In the back of the 55, immediately over the end, there is a splendid-looking lode, worth 5 tons of good yellow ore per fathom; judging from the present appearance of the lode, we hope to be able to advise you of a still greater improvement. A more promising end cannot be seen. The lode in the eastern stope is worth 4 tons of good yellow ore per fathom. The western stopes are together worth 4 tons of ore per fm. In the 45 the men are desisting the lode.

G. R. Odgers, W. Bennett, April 7: There is no alteration in the 120 east nor in the cross-cuts. In the 55 the lode in the end is now 4 ft. wide, worth more than 5 tons to the fathom, and we feel pretty certain that there is a large deposit of ore not far distant. Better indications we never saw. The eastern stope at this level is worth fully 4 tons per fathom, and the western stopes 2 tons, respectively. The lode in the 45 will be taken down to-morrow.

EAST WHEAL SETON.—Joseph Vivian and Son, H. Arthur, April 7: The engine-shaft, sinking below the 20, is without change to notice, and the progress in sinking is good. In the flat-rod shaft, sinking under the 20, the lode is about 5 ft. wide, and presents a very encouraging appearance, containing a

great deal of quartz, accompanied recently by gossan and mundic. In the 20, east of flat-rod shaft, the lode is about 3 ft. wide, composed principally of quartz, gossan, and mundic, with occasional good stones of copper ore. At Cartwright's shaft the water has begun to fall off, so that we anticipate being able shortly to resume operations in the 34, where we are likely to open out ore ground. The stopes are producing about 2 tons of copper ore per fathom. We shall sample a parcel of copper ore on the 20th, which will be about 65 tons.

EXCELSIOR.—George Rickard, April 7: The driving of the deep adit level south, towards the great tin and copper lodes, is progressing very satisfactorily, and the class of ground is all that can be wished for, being a beautiful-looking killas, with branches occasionally crossing the end, consisting of capel, friable spar, &c., containing a little tin, with an increased quantity of water issuing from the branch of the end; these indications lead me to expect the north tin lode is near at hand. We have completed the clearing up of the trial shaft on Wheal Thomas lode, which is 13 fm. deep, and find a level driven about 10 fm. west, by the side of the lode. We have put the men here to cross out the lode, and have cut into it about 3 ft., with no signs as yet of meeting with the south or footwall; so far as seen it is presenting a very promising appearance, composed of capel, spar, and gossan, with sailing rock for tin, with indications of a further improvement on reaching the south wall of the lode.

FEWD.—J. Pauli, April 7: In the engine-shaft, at 23½ fm. under the surface, we have commenced to cross-cut south towards the 20 coming north from the old shaft, and are in 1½ fathoms driving going on by six men, the sinking of the shaft below this level is progressing favourably by nine men, and we shall quickly be deep enough to cut out to, and fix the 25 fathoms of 11-in. pumps with 10-in. plunger-pole for the proper drainage of the mine as it is opened out on corner of the lodes. The water being quite dry for a fortnight past the water-wheel at old shaft is now nearly idle, and does not keep the water out from the 20, so that cross-cutting here for the present is at a standstill; we have driven 5½ fathoms, and if we get rain, so as to go on again forthwith, we shall have the communication between both shafts complete in four weeks from this time, and then at once be able to put men to cut open the lode to its full width to stop ore ground rapidly, and make regular returns of ore. Nothing has been done at the 15, east of shaft, on new lode, for the last month, these four men being employed in making a reservoir across the brook, into which the water from the mine will also be pumped when the plunger-lift referred to is put down; this reservoir will be of great importance to accumulate water pumped out of the mine at night to aid the present natural supply in the washing of ore during daytime, &c. The fine lode of ore driven in at the 10, west of old shaft, as far as that sunk upon in this shaft, will now forthwith be worked from the new perpendicular or engine-shaft, and thus early returns of considerable value will be made.

FRANK MILL.—J. Cornish, V. Gorvish, N. Addems, April 6: The olvan in the 145 fm. level north end has disappeared, but we have no lode yet; we are, therefore, preparing to drive a cross-cut to find it. The ground in the 145 south is favourable, and without any particular change. The east lode, in the 130 fm. level south, is producing a small quantity of saving work, and the ground is also favourable. The western lode in the 100 fm. level south, driving south, has a good appearance, but unproductive of lead ore to value. There is no particular change in the lode in the 100 north, where we are driving north and south from the p. of the intersection: in the former it will yield 1½ ton, and the latter 1 ton of lead ore per fathom. The west part of the west lode, in the 72 fm. level, is producing a little lead ore, and letting out water. The ground in the cross-cut driving west, at the same level, is looking more favourable, and we appear to have almost past the hard bar of ground. The stopes throughout the mine and the tributary pitches, on the whole, are yielding about the usual quantity of ore as for some time past, and everything working very well. We sampled on Saturday last 152 tons of silver-lead ore, being the last sampling for the current quarter, making a total of 262 tons.

GAWTON COPPER.—G. Rowe, June, April 2: We have intersected the south capels of the lode in the 95 fm. level cross-cut, north from King's engine-shaft, and shall no lose time in cutting through the lode, so as to ascertain its size and value. We purpose to suspend the drivage of the 82 fm. level cross-cut north for the time being, and resume working upon the south lode, west of engine-shaft. The lode in the 82 fm. level, east of said shaft, is looking well, and yielding from 5 to 6 tons of ore per fathom. The lode in the 70 fm. level east is also showing a very kindly appearance, producing from 4 to 5 tons of copper ore per fathom. Nicholl's stope in the bottom of the 70 fm. level, east of Ferrell's winze, is worth 7 tons of ore per fathom. Simon's stope in the bottom of the same level, west of Cradick's winze, is worth 5 tons of ore per fathom. Williams' stope in the back of the 70 fm. level east is worth 3 tons of ore per fathom. Our monthly pay and settings will be to-day, particulars of which we will forward early in the coming week.

GOGGIN.—April 6: At the 116, east of the winze below the 100, the lode is 5 ft. wide, worth 1 ton of lead ore per fathom. In the two stopes over this level, east of winze, the lode is large, producing 18 cwt. of lead ore per fathom. Nothing met with in the cross-cut north at the 100 east. The lode in the three stopes over this level, east of rise, varies from 4 to 9 ft. wide, and yields on an average 14 cwt. of lead ore per fathom. The

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LYWERNOG.—J. Davis, April 6: The lode in the 62 fm. level, east of the cross-cut, has improved in value during the last fortnight, and it now produces 15 cwt. of lead ore per fathom. The lode in the 63 fm. level, west of the cross-cut, continues just the same as when last reported on, but I have stopped this end, and have put the pare to stop the backs of the level, as this may throw some light on the several branches of ore we have here. The stopes in the back of this level, east of the cross-cut, are yielding about the same quantities of ore as when last reported on. The lode in the 50 fm. level, east of the engine-shaft, is looking very promising, and produces now 7 cwt. of ore per fathom.

LOVELL.—J. Nancarrow, April 6: The adit at our present point of operations is quite full. We have put two men more in it, that the water may be let down as soon as possible to commence operations at the shaft, which is now quite ready for drawing. There is some very good looking tin-stuff in the adit.

LOVELL CONSOLS.—J. Nancarrow, April 6: We have set the north lode to sink below the 12 fm. level, at 12 ft. per fathom; this shaft is perpendicular, and by sinking 12 fms., will get down on the lode; the ground is very congenial for tin. We are clearing the workings below the adit westward, and already see tin in the lode. Our estateing in the north-east part of the sett is already rewarded by the discovery of a lode, which contains tin, and looks very promising; we shall sink on this as far as the water will allow us.

MAES-Y-SAFN.—April 6: In the 370, east of Grosvenor's shaft, there is no change to notice. The 350 west is showing signs of improvement. The 310 east has not changed since last reported. The 310 west is producing little lead, but not enough to value. The 290, east of No. 3 shaft, has slightly improved. In the winze under the 310, west of Grosvenor's, the lode is producing 2 tons of ore per fathom. The stopes in bottom of the 310 west are producing 2 tons per fathom. The stopes in back of the 310 east is, on the whole, looking well, the lode being worth 3 tons of ore per fathom for a short length (about 4 yards). The old stopes throughout the mine are poor. The mine is in fork, and the machinery is in good working order.

NANTEOV CONSOLS.—T. P. Thomas, April 7: Penrhiew: The 36 fm. level, west of Thomas's shaft, is looking very promising indeed, producing a little lead and blende, but not enough to value; from its appearance I hope soon to announce a good improvement. The 26 fm. level, west of ditto, has been poor for the last few days, but to-day the lead is coming in again. Jenkins Jones's stope, in the back of this level, is producing from 10 cwt. to 12 cwt. of lead ore per fathom, with a little blende. John Hughes's stope, in the back of ditto, is yielding from 10 cwt. to 12 cwt. of lead ore per fathom, with a little blende. Samuel Williams's stope, in back of ditto, is yielding from 12 cwt. to 34 ton of lead ore per fathom. We have commenced sinking the winze below the 26 fm. level, but there is not sufficient done in it to report on its produce this week. The stope in the back of the 16 fm. level, west of ditto, is yielding from 7 cwt. to 8 cwt. of lead ore per fathom.—Bwlch Gwyn: We are still cross-cutting north in the 50 fm. level, on the south lode, and have cut through several branches containing lead, spotted with copper, but we expect the main part is still ahead of us. We have completed the repair of the Ffrwdwen Pond, and we shall now proceed with the Pwllglas. I have enclosed bill of lading of the ore sold to Messrs. S. Nevill, and Co.

NEW CROWN HILL.—A. Kent, T. Trolease, April 5: Our operations at the engine-shaft continue to progress in the usual way, as fast as the nature of the work will allow.

NEW PEMBROKE.—F. Puckey, J. Puckey, April 4: The sinking of the new engine-shaft is nearly completed to the 75 fm. level. We are now busy fixing the pitwork, bobs, &c., and are making preparations to get the 80-in. cylinder engine to work as early as possible. In the 75 end, driving east of the shaft, the south part of the lode is 5 ft. wide, and worth for the 180 fm. per fathom. The lode in the rise in the back of the same level, behind the end, is 4 ft. wide, and worth 160 fm. per fathom. In the stope in the back of the 75 fm. level, east of the shaft, the lode is 1½ ft. wide, and worth 70 fm. per fathom. In the stope in the back of the same level, further east, the lode is 2 ft. wide, worth 80 fm. per fathom, and looking promising for improvement. In the 68, or middle level, the lode in the end driving east is 4 ft. wide, and worth for tin and copper 200 fm. per fathom. In the stope in the bottom of the 68 fm. level, west of the winze, the lode will average full 5 ft. wide, and is worth for tin and copper 200 fm. per fathom. The lode in the stope in the back of the same level, east of the winze, is 6 ft. wide, and in places producing rich work for copper, worth full 800 fm. per fathom. In the 60 end driving west, east of the shaft, the south lode is large, but unproductive. In the 60 cross-cut driving north, east of the shaft, the ground is favourable for progress, and we expect to intersect the north lode in the present month. The mine throughout is still looking very well, and all our operations are being forced on as rapidly as possible.

NORTH CROFTY.—Joseph Vivian and Son, William Thomas, Junr., April 7: We are making good progress in sinking the engine-shaft under the 208, in a lode of a promising character. In the 208, west of Petherick's shaft, the lode has improved, both in size and composition, and is now worth 100 fm. per fm. The eastern stope, in the back of this level, is worth 280 fm. per fathom, and the western 200 fm. per fathom. In the 195 west the lode is worth 200 fm. per fathom. We shall sell about 16 tons of tin to day.

NORTH POOL.—J. Vivian and Sons, F. Clymo, April 7: In the 40, east of Ballarat shaft, we have a considerable improvement, the lode being now 2 feet wide, and producing 3½ tons of yellow copper ore per fathom; it looks like the commencement of a valuable deposit of ore.

OLD GUNNISLAKE.—F. Phillips, April 6: The lode has somewhat changed its course since my last, underlying north faster than before. I think it is quite as large, but carrying more capel. I regard the change as temporary, and have no doubt but that it will soon resume its proper course; 2½ feet have been sunk. Cross-cut: The ground still remains stiff for driving, consequently our progress is not so good as I could wish, but we are still meeting with spots and stains of ore in the cross-course, and think we are near the lode; 3 ft. have been driven this week.

OLD TREBURGETT.—Wm. Hancock, April 5: The engine-shaft is communicated to the adit level, cl-tern-plat cut, and we have managed to sink 5 feet below for a fork, and bearers to carry the pitwork. The shaftmen are now engaged fixing the bearers, &c., to carry the pitwork; when completed they will properly secure the shaft from adit to surface, case and divide it, and fix permanent footway, so as to be in readiness to receive the pitwork as soon as the capstan and shears are erected. The boiler pole, and several other portions of the engine, are delivered on the mine. We still continue to find occasional stones of rich silver ores in the caps of the old attle heaps at surface, which evidently shows a great deal of it must be left in the caps of the lode below adit. We shall in a day or two decide about clearing up John's shaft, south of our engine-shaft, or sink a new one, so as to get down in time to open up this part of the mine rapidly.

PEN-AN-DREA UNITED.—W. Tregay, J. Thomas, April 2: Sump: We have resumed the sinking below the 140, and expect to make good progress. We do not expect to open on the lode below the 140 until we have got down some fathoms, as such a course would retard our progress in sinking. The stopes in back of this level, both east and west of cross-course, are each yielding 9 cwt. of black tin per cubic fathom; the lode is 2 fms. wide. The ground in the 120 north is favourable for driving, and good progress is being made. Should no change of underlie intervene we may expect to intersect the north lode in about 11 fm., further driving. The ground in the 100 east is favourable for rising, and the lode producing stones of tin.—Cobbler's: In the rise in the 120 fathom level west the ground is still hard for rising; the lode is producing stones of tin. The value of the north end in the 90 west has again fallen off, and it is now unproductive, although the lode has a promising appearance, and is letting out much water. In the 80 east the lode is worth 200 fm. per fm.; in the 80 west, 100 fm. per fathom. The lode in the 60 east is not quite so good as it has been, now worth 150 fm. per fathom. The lode in the 60 west is worth 300 fm. per fm.; in the 55 east, 150 fm. per fm.; in the 55 west, 250 fm. per fm.; in the 47 east, 80 fm. per fm.; and in the 47 west, 100 fm. per fathom. No other changes to report.

PEN'ALLT.—T. Glazebrook, April 2: I beg to hand you copy of tutwork setting for April month, with report of the mine. No. 4 cross-cut is extended 29 fms. 1 ft. The present end is very wet, which indicates we are near intersecting the lode; re-set to drive by six men, at 50 fm. per fathom. The cross-cut is extended 12 ft. north from the bottom of the winze, in which the lode produced silver-lead ore of good quality; re-set to drive by six men, at 90 fm. per fathom. The level to drive west of No. 1 cross-cut by six men, at 110 fm. per fathom; the north part of the lode on which we are now driving is yielding 200 worth of silver-lead ore per fathom. I hope by the latter part of next week to have the foundations complete for the wheel and crusher, when we shall push on building standy &c., with all possible dispatch.

PENHALL WHEEL VOR.—W. Martin, April 6: The sinking of the engine-shaft below the 120 is progressing satisfactorily, and the ground is without any material change. The cross-cut driving north at the 120 is letting out more water, which in my opinion is coming from the lode; the ground is just as last.

PRINCE OF WALES.—J. and W. Gifford, April 6: In the 77 east the lode is still improving in size, being now 1 ft. wide, yielding a little saving work—a very promising end. In the 77 west we are driving by the side of the lode. In the 65 and 55 west we are also driving by the side of the lode. In the 65 east the lode is 1½ ft. wide, principally capel and gossan. In the 55 west, on north lode, no lode has been taken down since last report. The stope in the back of the 65 east is worth 80 fm. per fathom. A stope in the back of the 65 west is worth 80 fm. per fathom. The lode in the 55 east is worth 120 fm. per fathom. A stope in the bottom of the 55 east is worth 80 fm. per fathom. The rise against the new shaft is progressing very favourable. No change in tribute department.

PRINCESS OF WALES (Calstock).—T. Foote, G. Rickard, April 6: The sinking of Harris's engine-shaft is going on after the rate of 3 ft. per week, and the ground is still containing branches of peat, friable spar, and spotted throughout with yellow and grey copper ore, dipping north towards the great gossan lode, which we regard as favourable indications for meeting with good results at the 50.

BEDMOOR.—F. Bennetts, April 7: There is no change to notice in the winze sinking below the 25, worth 150 fm. per fathom. The lode in the stope east of the cross-cut, in the back of the 25, is worth 60 fm. per fathom.

RESPERRY.—Parkyn, April 7: The lode in the 15 east has improved this week, and is yielding rich tin. The lode in the 15 west is without change, yielding good work for tin. I sent you the stope of tin yesterday which was taken from the west end in the bottom of the level; its weight is 73 lbs., and it is nearly solid tin. We have a very fine lode gone down in the bottom of the level. The four stamp-houses are still at work, and the tin coming from stamps is very satisfactory; but I would recommend you to stop the stamping with this little steam-engine, as the 2 tons of the sold from these four heads in three weeks is enough to show you how rich the lode must be for four heads to stamp in so short a time. I should recommend you to sink the present shaft, and stop the stamps until the large one is set to work, when I believe you will have very rich mine; indications warrant this opinion with the result of the sales of tin, &c. Mr. John Hocking, of Redruth, was on the mine yesterday, and we planned down the engine-house, boiler-house, &c. I beg to say that Mr. Hocking, the engineer for the company, was highly pleased with the prospects, and he was surprised to see such rich work so shallow as 15 fathoms.

ROARING WATER.—H. Thomas, April 2: Since Tuesday last a considerable quantity of good looking spar has made its appearance in the south side of Grady's lode, at the 42, west of Gillman's shaft, which I look on as a favourable indication, particularly so as the ore made in a similar nature to the west of the present end. At the 28 the lode is certainly undergoing a change, and from appearances no doubt for the better. I regret to say that we cannot make more progress, but from the tangled nature of the ground, and the wetness of the sand, we cannot possibly do more than is being done. The men are relieving in place of work, therefore no time is lost. I do not think we shall drive more

than 10 or 11 ft. this month. However, I hope we shall soon have better ground, to enable us to make more rapid progress.

SOUTH CONDURROW.—J. Vivian and Son, H. Abraham, April 6: In the 82 fm. level cross-cut south, west of King's shaft, we are letting down a great deal of water, which is completely draining the 71 and 61 fm. levels for a length of 40 fms.; and we think, therefore, that the south and main part of the lode which we are now cutting into in the 71 fm. level, is near at hand. In the 71, west of King's shaft, we have cut 3 ft. into the south part of the lode, which is very hard limestone of rich quality, and it is continuing further south as good as it has ever been; the value of this part of the lode, as far as seen, may be estimated at 500 fm. per fathom. In the 61 fm. level, west of King's shaft, the lode has improved, now 3 ft. wide, and worth 80 fm. per fathom. In the 51 fm. level, west of Vivian's shaft, the lode is 1½ ft. wide, and (in)ny. In the same level, west of King's shaft, on No. 1 north branch, the lode is 9½ ft. wide, and worth 100 fm. per fathom. The tin stopes, on the whole, are improving in the quality of the flintstone, which enables us to calculate on increasing sales of tin.

SOUTH MERLLYN.—April 7: Vickery's Shaft: In the 80 yard level, driving north from this shaft, we have to day got into the ground about the winze sunk by former workers from the 60. The men are now busily engaged clearing, when this is done we shall be able to report fully. In the 80 yard level, south of same shaft, we have had during the week some large stones of lead, one weighing 20 lbs. We must push on this end as fast as possible; the lode is of the most kindly character.—Ruddall's Shaft: In the 60 yard level, driving north from this shaft, the ground has become more favourable for progress.

SOUTH PLYMELIMON.—John Walters, April 6: Our general setting-day was on April 2, the first Saturday in the month, and I set the cross-cut driving north towards the shaft, by four men, at 40 fm. per fathom. There is no change in the shaft since last report. The weather is very favourable for the surface work, and in that department we are proceeding satisfactorily.

SOUTH VAN.—J. Richards, April 8: The lode driving east is very large and well defined, and is composed of carbonate of lime, blende, and spots of lead and copper ores. I should strongly advise the commencement of the engine-shaft at once, as the weather is very favourable, and no doubt could be sunk from 10 to 15 fms., by manual labour, so that we should be in readiness by the time the wheel was completed.

SOUTH WARD.—T. Foote, April 5: I was at the mine yesterday, and beg to report satisfactory progress making in clearing and cutting down the engine-shaft. The shaft is about 10 fms. deep, and the back of the old men's level can be seen. In a few days we hope to be able to examine it. The drawing-machine is working well, and the surface work now nearly completed.

STRAY PARK.—J. Thomas, J. Cook, April 7: There is no alteration of importance in the mine since the last report. The lode in the 283 east is worth 180 fm. per fathom. The engine-shaft under the 283 is a little improved, but the ground is becoming softer, which is not favourable for permanent productiveness. The lode in the 265 west is hard, but not producing tin enough to value.

TANKERVILLE.—Arthur Waters, April 5: We shall have 100 tons of lead ore ready for sampling on Thursday next, and unless I hear to the contrary, shall offer the stuff in two lots, of 50 tons each. The ore is all of the same quality, but my experience has been that two 50-ton lots bring out greater competition than one lot of 100 tons; if you think to the contrary, please let me hear from you in time to carry out your wishes. All the places in operation are quite as productive as when I wrote my monthly report.

TREYDEE.—Captain Rouse, April 5: For many years this mine has been worked as an open quarry on a very large course, with tin thinly disseminated throughout. At present the lode in the bottom is become better defined, and is producing work for tin, worth 1 cwt. of tin per ton of stuff. And also very large stones of grey copper ore, of high percentage, and for silver. We shall sample on the 14th inst. a good batch of tin. The mine all through looks well, and shows every indication of further improvement.

VAN CONSOLS.—T. Corfield, April 7: There is no change to notice in the 30 east since my last report. We are very busily engaged in completing the connections from the new wheel to Gundry's shaft. I hope to have it fairly at work in a week from this time.

VAN UNITED.—April 7: The lode in the deep adit, driving west upon the course of the lode, is increasing in size, containing good strings of blende and strong spts. of lead, and is precisely of the same character as it is in the Van Mine, where it makes the large body of lead. I am fully expecting to cut into a course of ore in the driving of this level shortly, which will give us good backs to work away. I have this day sent samples of the lode broken from the end to the company's office, and they can be seen there.

WEST BASSET.—G. Lightly, April 6: In the 124 cross-cut north the lode is worth about 300 fm. per fathom for tin. In the 114 west, on the caunter, the lode is worth 50 fm. per fathom for tin. In the 75 west, on Hambley's, the lode is worth 50 fm. per fathom for tin. All other points continue much the same.

WEST CARADON.—W. Johns, N. Richards, April 6: Clymo's lode, in Marina's shaft, below the 55, will produce near 1½ ton per fathom. The cross-cut at this level, north towards Allen's lode, and as well as the 42 south to Jope's lode, we are pushing on with all speed. The 42 east, on Allen's, we are going on by the side of the lode. The 42 east is very much improved, worth in the bottom of the end 1½ ton per fathom. The lode in the winze below this level is making a splice. The stopes in the back of No. 1, 2 tons; No. 2, 3 tons per fathom. The winze below the 30 is worth 1 ton per fathom. The 27, west of Crouch's shaft, is worth 1 ton per fathom.

WEST CWM ERFIN.—April 5: In the adit level, going east of engine-shaft, the lode is 4½ ft. wide, composed of spar, carbonate of lime, blende, and clay-stone, with nice strings of lead ore, altogether presenting a very favourable appearance. In the cross-cut, north from the adit level, the ground is still rather hard for exploring, and no change to remark.

WEST JEWELL.—John Mayne, April 7: I have put nine men to clear and repair Greene's engine-shaft, where it will intersect the quarry tin lode, about 50 fms. from surface. At this shaft we purpose to erect the engine, as it is sunk to the east of Odgers's cross-course, where there will be 70 fms. to drive on the lode to the county cross-course. In all the neighbouring mines the lodes have proved very productive between cross-courses. I have also put six men to sink a shaft to cut the south tin lode, which we calculate to reach about 10 fathoms from surface, and then sink on its course, which we hope to do in a fortnight. This lode east of the cross-course has been very productive, where they have raised from the surface to the 30 upwards of 40,000 lbs. worth of tin. We have ten pairs of tributaries working in back and bottom of the shallow adit level, on the south quarry tin lode, about 50 fms. from surface. I am pleased to say the pitches are all looking well, and the tin-stuff they are breaking is equal to that which was sold on Thursday last; this lode has not been cut below the deep adit.

WEST MARIA AND FORTESCUE CONSOLS.—Wm. Skewis, Jas. Donnal, April 7: West Maria Lode: Willesford's shaft is commenced sinking below the 71, and we expect an early improvement. The drivage in the 71 east appears to be on a south lode; the north or main part is being taken down, but not yet cut through; so far as seen, it is a good grey lode, and the value will be given when properly laid open. The 71 fathom level west is being driven by the side of the lode. The lode in the 60 east has a much better appearance for some little time past; it is now worth 350 fm. per fathom, and the prospects very encouraging for an important improvement. The lode in the 60 west, sinking in the bottom of this level, is a splendid course of ore, and worth fully 100 fm. per fathom. There is one stope working in the back of the 60 worth 350 fm. per fathom. The lode in the stope west of No. 1, white, west of shaft, is worth 350 fm. per fathom. The 140 east is being driven by six men, at 190 fm. per fathom. The engine-shaft has not yet proved equal to expectation, there is, however, a cross-course not far ahead, and a capital lode of tin in the bottom of the 140; we hope to intersect this cross-course, and the shoot of tin very speedily in the 150; we are driving on the end by six men; the lode is worth 100 fm. per fathom, and looks likely to improve. A rise in the back of the 150 east is worth 200 fm. per fathom, and has a very promising appearance for future improvement. A rise in the back of this level is worth 150 fm. per fathom. The 140 east is being driven by six men; the lode is worth 100 fm. per fathom. We have a hard bar of ground at present, but we think will soon wear out. We are stopping the bottom of the 140 west, with the view to drain the level previous to driving the same. We have communicated the winze below the 130 east with the 140; the lode in this winze is worth 150 fm. per fathom. The 130 east has been driven by six men during the past three months; we have to state that, owing to the breaking of the main rods at the engine-shaft, in the early part of January, and having had to put in a new cog-wheel and air-pump to the winding-engine, has interfered sadly with our first month's returns; we have, however, surmounted these difficulties, and trust to go on in future without accidents to the machinery. As soon as Hind's engine-shaft is communicated with the 80 (about 90 fms. from surface) we shall dispense with the pit-work at the engine-shaft above the 80; this will be a great relief; we are, therefore, urging on the sinking of Hind's engine-shaft, as well as rising against the same, in the back of the 80; this shaft has been sunk during the past quarter 4 fms. 4 ft.; the first month was chiefly occupied in fixing pitwork and rods. The total depth below surface is now 38 fms. 3 ft. 6 in., sinking by nine men, at 190 fm. per fathom. The stope and pitches continue to yield much the same as for the same time past.

WEST SPARNO.—W. Tregay, April 2: In the deep adit east the ground is improving, and the lode producing

* * With this week's Journal a SUPPLEMENTAL SHEET is given, which contains: Prof. Smyth's Lectures at the Royal School of Mines—Original Correspondence: Collapse of Tubes in Cornish Boilers; Our Coal Supplies (P. B. Brodie); Utilisation of Refuse Shale (E. G. Buttery); Colorado, and its Mineral Wealth (T. Jennings); Rhenish Prussia, No. VIII.; Mining in Prussia; Rhenish Consolidated Mining Company; Gold in Nova Scotia; Monte Albo Mining Company; Patent Panacea; Metallic Mining (W. Gibson); Gas at the Van Mine; Barytes Mines; South St. Just Tin Mining Company; Shropshire Mining District, No. III.; Mining in Shropshire (J. Richards); Crenver and Wheal Abraham Mines; East Wheal Lovell Mining Company; Virtuous Lady Mine—Foreign Mining and Metallurgy—Foreign Mines Reports—Metallurgical Industry of Cleveland—Patent Matters (M. Henry)—Manufacture of Iron and Steel, &c.

The Mining Market; Prices of Metals, Ores, &c.

METAL MARKET—LONDON, APRIL 8, 1870.

COPPER.	s. d.	s. d.	IRON.	Per ton.
Best selected, p. ton	73	0 0	Bars Welsh, in London	7 2 6 7 5 0
Tough cake and tile	69	0 0	Ditto, to arrive	7 5 0 7 10 0
Sheathing & sheets.	70	0 0	Nail rods	7 5 0 7 10 0
Boats	77	0 0	Staff'd. in London	8 5 0 9 0 0
Bottoms	78	0 0	Bars	8 0 0 9 0 0
Old (Exchange)	63	0 0	Hoops "	8 17 6 10 15 0
Burra Burra	72	0 0	Bars " at works ..	7 15 0 8 0 0
Wire.....per lb.	0	10 0	Bars " 8 2 6 8 5 0	
Tubes	0	11 0	Shots, single	9 15 0 11 0 0
BRASS.	Per lb.		Pig No. 1, in Wales ..	8 15 0 4 5 0
Sheets	per lb.	81 4d. 9d.	Refined metal, ditto ..	4 0 0 5 0
Wire	"	7 1d. -	Bars, common ditto ..	6 15 0 5 0
Tubes	"	10 1d. - 11 1d.	Do, marsh. Tyne or Tees ..	6 10 0 0
Yellow Metal Sheath.p. lb.	6 1d. 6 7d.		Do., railway, in Wales ..	6 12 6 7 0 0
Sheets	"	6 1d. 6 7d.	Do., Sved. in London ..	9 15 0 0
SPELTER.	Per ton.		To arrive	9 12 6 0
Foreign on the spot £19 10 0 - 0 0 0			Pig No. 1, in Clyde ..	2 15 6 2 5 0
" to arrive ..	19 10 0	0 19 15 0	Do. f.o.b. Tyne or Tees ..	2 9 6 0
ZINC.			No. 3, 4, f.o.b. do. ..	2 6 0 2 7 0
In sheets	£24 0 0 -		Railway chairs	5 10 0 5 15 0
QUICKSILVER (p. bottle) (nom.)	6 17 0		Spikes	11 0 0 12 0 0
TIN.			Indian Charcoal Pigs,	
English blocks	£129 0 0 -		In London, p. ton ..	6 0 0 6 10 0
No. bars (brls.)	130	0 0 -	STEEL.	Per ton.
Do., refined	132	0 0 -	Swed., in kgs (rolled) ..	13 10 0 13 15 0
Banca	130	0 0 -	" (hammered) ..	14 15 0 0
Strata	127	0 0 128 0 0	Ditto, faggots	15 15 0 16 0 0
TIN-PLATES.*	Per box.		English, spring	17 0 0 23 0 0
IC Charcoal, 1st qua.	1 5 6 1 8 0		LEAD.	Per ton.
IX Ditto, 1st quality	1 6 1 1 13 6		English Pig, com.	18 10 0 18 12 6
IC Ditto, 2d quality	1 6 0 1 6 6		Ditto, LB	18 15 0 0
IX Ditto, 3d quality	1 6 0 1 12 8		Ditto, WB	19 10 0 -
IC Coke	1 3 0 1 12 8		Ditto, sheet	19 0 0 19 5 0
IX Ditto	1 9 0 1 9 8		Ditto, red lead	20 0 0 20 10 0
Canadaplates, p. ton ..	13 10 0 14 10 0		Ditto, white	27 0 0 30 0 0
Ditto, at works	13 0 0 14 0 0		Patent shot	22 0 0 -
* At the works, ls. to ls. 6d. per box less.			Spanish	18 0 0 -

REMARKS.—The amount of business transacted in our markets in metals during the past week continues to be limited. Whatever the distant future may discover, there are at present no indications of much increased activity, and we are rather led to the conclusion that matters may go on as they are for some time to come. As a rule prices are moderate, and while this continues to be so it is not probable that there will be any falling off in the demand.

COPPER.—The market still continues to droop. English has again given way, and there are no indications of recovery, but rather the reverse. There appears to be no buyers, except at considerably reduced rates, and it is rumoured that manufactured has been offered at 73l., and that even this price has not met with acceptance. Notwithstanding the dull state of the market, and the declining prices of English, foreign has been steadily upheld at even a slight improvement upon last week's quotations, the business transacted being chiefly from 66l. to 66l. 5s. for Chill bars, being 5s. higher than the lowest rates for the previous week. Sales have been neither for large quantities nor have they been numerous; but the slight improvement referred to may be chiefly attributed to the announcement of the last charters being comparatively small—1000 tons only, against the average of 2000 in the fortnight. The next telegram will probably reach us in the course of a day or two; and should the charters again prove light, a greater strength may be imparted to the market; but owing to the absence of orders for English manufactured this would have very little or any good effect upon the price of this description of copper. On the other hand, if charters should fully up to the average or in excess, the consequences upon both the English and foreign varieties, but more especially the latter, would necessarily be disastrous, and thus a still more general depression would be created. In Australian no variation in price has taken place. In yellow metal a very fair amount of orders have been executed, but at slightly easier rates—64d., 4 ft. by 4 ft. sheet, ordinary Indian specification. Some of the smelters have conceded to buyers' limits, as their works were wanting orders.

IRON.—Rails have been in fair request, and higher prices have been obtained. Ironmasters have been enabled to realise better prices, and at present nothing under 7l. 7s. 6d. can be had, either for prompt or distant delivery. The demand for rails continuing so good tends considerably to stiffen the prices of other descriptions of iron, and some of the ironmasters, finding that rails are in so much better request than bars, have arranged to apply their mills to this purpose. The large amount of work which is in hand, and is likely to be proceeded with, particularly with reference to the requirements of Russia, India, and other foreign parts, will probably keep the ironmaster in full employ for some time to come, and also tend to maintain present rates; and it is by no means improbable that higher prices may have to be paid. Merchant bars have been in good request, and most of the houses which were taking orders at the recent comparatively low prices decline further sales, unless at higher rates. As many of the ironmasters, by their late arrangements with reference to the conversion of their mills to railway bar purposes, have reduced their capacity for turning out merchant bars, the orders that come into the market will not be so rapidly executed as before, and the effect of the supply being less than the demand is already being felt in the higher prices that are being obtained.

The price of merchant bars ls. as compared with railway bars, certainly too low. The latter are quoted at 7l. 7s. 6d. to 7l. 10s. at the works, while merchant bars are only selling at 7l. 2s. 6d. in London, showing a difference in value of about 2 s. per ton in favour of railway bars, while as a rule merchant bars fetch slightly more than rails. Staffordshire descriptions at present do not evince the improvement which might have been looked for. In Swedish bars no sales have been effected, and the accounts from India having been very favourable the market is perfectly stagnant for the time being. In Scotch pig-iron there has been more speculation, and prices have advanced to 56s., 56s. 6d. There is a much stronger tone prevailing, and it is not improbable that higher prices will be realised.

LEAD.—In pig business has been transacted at 187. 10s. to 187. 12s. 6d., and the market is weak at these prices. In manufactured a corresponding weakness is apparent.

QUICKSILVER cannot be bought; holders decline selling any more at present, except very occasionally in the smallest quantities for home consumption. The Spanish Government is still in a very unsettled state, and what their future intentions may be it is difficult to say.

STEEL.—In Sweden there is no change; very little doing.

SPELTER.—All speculative feeling seems to have entirely subsided in our market. Although the stock in London is exceedingly small, it produces no effect on the demand.

TIN.—In consequence of the high price (72d. fls.) at which the Banca tin was disposed of at the sale, on March 31, in Holland, and the further advance that has since ensued—up to 76 fls.—there has been great excitement here, and prices have rapidly advanced to 127l. and 128l. The market closes very strong, at 128l. to 129l. cash, 128l. 10s., having been refused for arrival. The diminished stocks, short supplies, and the strength of the present holders, combine to favour enhanced rates. There is also a further rise in the price of English tin. Some of the smelters decline naming a price, not having any tin ready for sale, and the lowest price at which refused can now be purchased, and that very sparingly, would be 133l.

TIN-PLATES.—At present the demand is not so good as was anticipated, but the high value of the raw material will tend to maintain quotations; indeed sellers, having to pay an enhanced price for their tin, cannot possibly afford to sell under present quotations.

THE IRON TRADE (Griffiths' Weekly Report).—The market for all kinds of iron has been steady this week. Small rounds and squares, angles, T-iron, and boiler-plates, continue in good demand; nail rods and hoops are likewise enquired for. The rail trade continues active, the demand for Russia is developing itself quite equal to the most sanguine expectations, and the great makers, particularly in South Wales, are fully engaged on contracts for Russia. The price of rails is advancing; American sections are now worth 7l. 7s. at Cardiff, and other sections are fetching as much as 7l. 12s. 6d. The "push" for rails during this summer is expected to exceed the pressure on the makers which they experienced for deliveries during the summer shipping season of last year. The disagreement with Mr. Schneider and his colliers is not yet settled. The Birmingham Quarterly Meeting will be held next Thursday, and it is expected

that a large business will be done at this meeting in most kinds of ore, particularly Staffordshire makes. The North Staffordshire ironmasters have held their Quarterly Meeting; the feeling was favourable to the future prospects of the trade. Tin-plates are in good demand, and the makers hope for better prices soon.—75, Old Broad-street, April 8.

THE TIN TRADE.—Messrs. James and Shakespeare: The demand for English continuing large, smelters have further advanced their rates 2s. on common, 3s. on refined, beyond those demanded by them on the afternoon of the 1st instant, and being bare of stock, are unwilling to book large orders even at present prices. In foreign sets a very large business has been done since our last was printed, Straits selling from 128s. up to 128s. for spot parcels, and holders are still quoting at our last value; in fact looking at the reduction in the stock which was offered during March, the deliveries of the month (of all kinds) from the port of London having been about 700 tons, many are keeping out of the market, feeling confident that much higher rates than the present must eventually be paid. There has also been a speculative enquiry for arrival parcels, and 124s. to 127s. 6d. paid according to time when vessels were expected, but the earlier dates have obtained the preference, and the highest prices have always been given for those lots due at latest May or early June. Bars have been also largely dealt in here from 126s. to 130s., and there is not much of this quality at present offering. Biliton realised in this market from 124s. to 128s. cash, but arrival lots were dealt in at rather irregular values, and we have not heard of over 126s., and that for some at a ship close at hand.

THE COPPER TRADE.—Messrs. James and Shakespeare: A few sales of slab have been reported at 65s. 1s. per ton, 66s. and even 67s. 5s. being paid in one or two instances, but there is no disposition to buy largely except at the lowest figure, and consumers are, therefore, supplying their present wants from other sources; about 100 tons for rather distant arrival were taken during the week at 67s. per ton, with this exception, however, that there has been no sale on such terms. For Australian there was a demand on Russian account, and a fair quantity of Wallaroo bought at 72s. 10s. to 73s. according to prompt, but as the steamers for St. Petersburg are only just being laid on the berths deliveries have not yet been made out of the stock now accumulating for shipment to that port, and which is estimated to amount to fully 1000 tons. Except in raw descriptions there is not much doing in English, and manufactured, of Indian sizes, have been sold at a reduction of 17. per ton from smelters' official quotation. Yesterday about 1600 tons of ore and regulus were sold at 13s. 1d. per unit, part being for Swansea, part for Liverpool delivery. The direct imports from the West Coast of South America into England during March were equal to 3158 tons pure; into Havre, ns.; and during the same period 730 tons of foreign copper from other countries entered the port of London, making together a total of 3886 tons. The mails received her from Chile during March advised charters for together 4887 tons, against 5451 tons during March, 1869. During present year 12,763 tons have been advised, against 15,575 in 1869.

In the early part of the week the MINING SHARE MARKET was somewhat affected by another failure in the Stock Exchange, and the consequent closing of a very heavy "bill" account in various speculative mines. A further rise, however, of 4s. per ton in tin, and an improved standard for copper ore, soon gave the market a better tone, and a fair average amount of business was transacted in West Chiverton, Tincroft, Australian United, Van Consols, Drake Walls, East Grenville, Wheal Grenville, Great Retallack, Taquaril, Bwlch, East Lovell, Pacific, Chiverton Moor, Chiverton Valley, Providence Mines, Great Laxey, Great Wheal Vor, and a few others.

The dividends from profits paid by mining companies during the month of March amounted to 47,262. 18s. Great Laxey (Isle of Man) paid 7500/- for the quarter, or 10s. per share. The market value of the mine is 270,000/-; capital paid up, 60,000/. The Van paid for the quarter 6000/-, or 10s. per share; the capital paid up is 51,000/-; market value, 960,000/. South Caradon Copper paid 2560/- for two months' profits, or 5s. per share; the capital paid up, 640/-; market value, 154,000/. Don Pedro Gold Mine paid 15,232. 8s., or 4s. per share, making 14s. per share for the year, or 129,551, on a paid-up capital of 53,313.; the market value of the mine is 380,810/-.

West Chiverton, 55 to 57; Van, 75 to 80. Van Consols, after declining to 3, leaves off firmer at 3s to 3s. Tankerville leaves off 13s to 14s; the mine has sampled 100 tons of lead, the produce of the first month since the present company came into possession. Great Laxey, 17 to 18; the accounts from Aug. 7, 1869, to Feb. 4, 1870, show—the lead sales, 1000 tons, 22,170/-; blends sold, 3968 tons, 13,989. 12s. 10d.; the stock in hand, 45862. 12s. 2d.; the labour costs, 14,739. 12s. 2d.; the bills, 31104. 18s. 3d.; the royalty paid Crown, 20821. 10s. 10d.; income tax, 625/-; and dividends paid September, 7520/-; December, 6000/-; balance to credit, 6351. 0s. 1d. The reserved capital account shows 8975/- in hand. The general statement of accounts show balance of assets over liabilities of 15,326. 9s. 5d. Great Retallack shares have advanced to 1,11s.; a fine discovery has been made in the 50, or bottom level south, worth 2 tons of silver-lead ore per fathom. This is in easy ground, and if it continues for a few fathoms, the agent states, they will be able to work the mine to a good profit. From relinquishments and forfeitures the shares have been reduced to less than 4000, and are, consequently, difficult to obtain.

East Grenville, 2 to 2 1/2; at the 55 the lode in the end is now worth over 5 tons of copper ore per fathom, and the agents are very sanguine that a large body of ore is not far distant. Wheal Grenville, 1 1/2 to 2 1/2; the new lode, in the 80 east and west, has been taken down, and worth 28s. 10s. per fathom in each end. Bronfloyd, 4 to 4 1/2; Bwlch Consols, 3 1/2 to 4 1/2; Chiverton Moor, 5 to 5 1/2; Chiverton Valley, 4 1/2 to 5; Devon Great Consols, 95 to 105; Drake Walls, 25s. to 27s. 6d.; Dolcoath, 133 to 137. Providence Mines, 39 to 41; the profit on last quarter was 1614. 15s. 3d., and 220L 16s. 8d. carried forward after payment of dividend of 1680/-.

There is good improvement in No. 4 carbona, which can be worked to advantage when a cross-cut has been got in at a deeper level. East Caradon, 4 1/2 to 5. East Lovell, 24 1/2 to 25 1/2; at the meeting a dividend of 2/- per share was declared. East Seton, 25s. to 30s.; Great Western, 1 1/2 to 2. Wheal Bassett, 50 to 60; at the meeting, held on the 6th inst., the accounts showed a profit of 1423. 1s. 9d. on the two months, and a balance against the company of 4877. 12s. The prospects of the mine are considered favourable. Great Wheal Vor, 11 1/2 to 12 1/2; Hindington Down, 15s. to 20s.; Holmbush and Kelly Bray, 10s. to 20s.; Marke Valley, 6 1/2 to 7; New Lovell, 2 to 2 1/2. North Crofty, 24 to 2 1/2; the mine sold 16 tons of tin on Thursday.

North Treskerby, 13s. to 15s.; at the meeting, held on the 5th, the accounts showed a profit of 144. 3s. on the two months, and a balance against the company of 623. 17s. 7d. The ore sold on March 24, and not credited in these accounts, realised 1224. 4s. 3d. The agents state that the general prospects of the mine continue good. North Koskar, 6 to 8; Prince of Wales, 15s. to 16s.; Princess of Wales, 5 to 7s. 6d.; Rosewall Hill and Ransom United, 22s. to 25s.; Pestarena, 20s. to 22s. 6d.; the directors have received the following telegram:—"580 ozs. of gold obtained during the month of March." This is 154 ozs. in excess of the month of February. Spear Moor, 16 to 18. Tincroft has advanced to 29. 31. Trumpet Consols, 24 to 25; West Caradon, 14 to 14 1/2; West Frances, 38 to 40; West Maria and Fortescue Consols, 2 1/2 to 3 1/2; West Seton, 130 to 135; Wheal Agar, 2 to 2 1/2; Wheal Buller, 2 to 4; Wheal Jane, 44 to 46; Wheal Kitty (Lelant), 13 to 15; Wheal Kitty (St. Agnes), 6 1/2 to 6 1/2; Wheal Mary Ann, 13 1/2 to 14 1/2; Wheal Seton, 30 to 35; Wheal Uny, 24 to 3; Australian United, 3 to 3 1/2; Chontales, 20s. to 25s.; Don Pedro North del Rey, 4 1/2 to 5 1/2; General Brazilian, 17s. 6d. to 20s.; Pacific, 8 1/2 to 8 1/2; Taquaril, 18s. to 20s.

The market for Mine Shares on the Stock Exchange during the week has been in a very unsettled condition, owing to failures of dealers speculating for a rise; the creation of new companies mining for

Staffordshire bars, 7L. 10s. to 8L. gas tubes, 60 per cent. to 67½ per cent. off list; boiler tubes, 40 per cent. to 42½ per cent.—Copper drooping. English tough ingot, 70L to 71L; Chilli slab, 65L 15s., to 66L—Tin is excited. English ingots nominally at 128L to 129L; straits 127L 10s., and higher quotations are anticipated.—Lead firm. Best English soft pig lead, 19L—Spelter inactive. English, 19L 10s. to 20L Silesian, special brands, 19L 5s. to 19L 10s.

The Bank of England return for the week ending on Wednesday evening showed in the ISSUE DEPARTMENT a decrease in the "notes issued" of £35,000, which is represented by a corresponding decrease in the "coin and bullion" on the other side of the account. In the BANKING DEPARTMENT there was a decrease in the "public deposits" of 2,967,750L, and in the "rest" of 857,844L; together, 3,855,603L; an increase in the "other deposits" of 168,810L; and in the "seven day and other bills" of 11,055L; together 179,865L—3,375,758L. On the asset side there was a decrease in the "Government securities" of 4648L, and in the "other securities" of 2,282,181L, together 2,286,829L, leaving a decrease in the total reserve of 1,088,907L.

MONTALBO MINING COMPANY (Limited).—Intelligence has been received during the week from the mines agreed to be purchased by this company, which goes to prove that the yield of ore is in excess of the quantity estimated by Mr. Bewick, the engineer, who examined the mines in December last. The information received by the directors is that from the Guzurra Mine 10 to 12 tons of ore is being raised daily, while the yield from the Su-Ergiolu workings since January last has been close upon 2000 tons, or at the rate of about 20 tons per day; thus taking the number of working days at 260 in the year, the output may be estimated at 7000 to 8000 tons of first-class ore per annum.

GOLD IN CORNWALL.—It is reported that a rich auriferous lode has been discovered in the eastern part of New Crow Hill Mine. Large quantities of rich silver-lead have been raised from parallel lodes, and great results are expected in depth, but the reported discovery of gold has been made upon a lode that has not hitherto been worked.

ROCHE CONSOLS (Roche, Cornwall).—The sett contains some rich tin lodes, which are intersected by an elvan course. Three lodes have been opened upon, and one which is now being driven is worth 30 lbs. of tin to the ton of the lode. It is intended to at once erect a steam-engine and 24 heads of stamps, by which the agent states regular monthly sales of tin can be made at a very low cost, yielding first-rate profits to the shareholders. There are now some thousands of tons of tinstuff at surface left by ancient workers, which Captain Parkyn (the agent) states will leave good profits in stamping. Altogether, the sett would appear to be a very promising one, and to contain every element of success. The mine is situated at the head of the Goss Moors, from which millions worth of tin have been raised.

UTILISATION OF SMALL COAL.

The utilisation of small coal from anthracite has been attended with greater difficulty than has been met with in dealing with the slack from other classes of coal, owing to the liability of the bricks to crumble when placed on the fire, but Mr. H. D'Aligny's report contains some suggestions which may, no doubt, be turned to practical account. He considers there are several methods for agglomerating the anthracite coal alone. He proposes to follow the ordinary process, but grind, mix, and blend the coal and pitch with the greatest care, so that the powders are fine, evenly mixed, and in definite proportions. Practical men believe that kneading and mixing machines do not correspond in excellence to those used for pressing the coal, which are comparatively perfect. If mixing-machines were more thorough in their action the quantity of pitch employed—which is the most costly ingredient, and keeps pressed coal at the present high rates—might be lessened. However, with anthracite, even when the paste is made as homogeneous, as thin, and as well worked as possible, it will be necessary to submit it to a greater pressure than the paste of ordinary coal requires, and to maintain this pressure for a longer time.

These second method for the agglomeration of anthracite which could be tried consists in the process used for manufacturing what is called "Charbon de Paris." The paste made of it with coal tar, with all possible care, and strongly pressed, might be heated in an oven to 300° centigrade, until all the oils are entirely volatilised. The third method consists in making a paste of fine coal dust and coal tar, exposing it to a strong fire until by distillation the tar is altered into pitch in the paste.

The amount required to put to work a first-class colliery capable of mining and shipping 500 tons per day would erect machinery powerful enough to compress even anthracite coal dust to a state almost as solid as when it existed in its bed beneath the mountains, and, perhaps, the amount so consolidated per day would not be less than could be obtained from the mine. Anthracite coal dust can be solidified by pressure without the admixture of any foreign ingredient, but the pressure must be powerful. An admixture of 10 per cent. of wet peat, or of 5 per cent. of fine clay, will help the solidification, and make the blocks more tenacious and durable. The amount of ash or residue would not be greater than that left by the combustion of ordinary coal, since the combustion is more perfect, and no cinders or unburnt embers are left.

But when circumstances will admit, an admixture of 50 per cent. of the rich bituminous coals will make a better fuel, and require no other adhesive substance than the bitumen which the bituminous coal contains, which is brought into an oily state by heat. By mixing half and half of the anthracite dust with fine or pulverised bituminous coal, and pressing them with great power in a hot state, the solidification will be complete. But the pressure required is much greater than may readily be imagined by those who have not tried the experiment.

COAL MARKET.—The fresh arrivals this week only numbered 76 ships. The market continued a steady business for all descriptions of coal, at previous prices. Hetton Wallsend, 19s.; South Hetton Wallsend, 18s. 6d.; Haswell Wallsend, 18s. 6d.; East Hartlepool Wallsend, 18s. 6d.; Hartlepool Wallsend, 18s.; Eden Main, 16s. 6d.; Russell's Hetton Wallsend, 16s. 9d.; Harton Wallsend, 16s. 6d.; Hetton Lyons Wallsend, 16s. 6d.; Tunstall Wallsend, 16s. 6d.—Unsold, 4 cargoes: 120 ships at sea.

Mr. J. R. Scott, the Registrar of the London Coal Market, has published the following statistics of imports and exports of coal into and from the port and district of London by sea, railway, and canal during March, 1870:—

IMPORTS.

	By Sea.	Tons.	Tons cwt.
Newcastle	200	114,447	London and North-Western 71,870 13
Seaham	27	7,331	Great Northern 91,872 0
Sunderland	151	73,946	Great Western 45,784 0
Middlesborough	14	5,862	Midland 86,108 0
Hartlepool	113	36,492	Great Eastern 49,073 2
Blyth	2	822	South-Western 1,063 12
Scotish	10	3,790	London, Chatham, & Dover 24 0
Welsh	10	2,963	London, Tilbury, & Southend 34 0
Yorkshire	24	3,102	Lond. Bright, & Son. Coast. 13 0
Small coal	3	580	Brighton 816 13
Cinders	4	206	Grand Junction Canal 716 18
Total	558	249,641	Total 347,873 18
Imports during March, 1869	633	234,567	Imports during March, 282,634 6

COMPARATIVE STATEMENT, 1869 AND 1870.

	By Railways and Canal.	Tons.	Tons cwt.
Jan. 1 to Mar. 31, 1870	1,767	820,013	Jan. 1 to March 31, 1870 .. 1,022,906 8
Jan. 1 to Mar. 31, 1869	1897	794,741	Jan. 1 to March 31, 1869 .. 736,373 4

Increase in pres. year	25, 72	Increase in present year..	285,634 4
Decrease in pres. year 130 ..			

THE EXPORT COAL TRADE.—The exports of coal from the United Kingdom amounted in February to 636,733 tons, as compared with 663,665 tons in February, 1869, and 582,227 tons in February, 1868. In these totals the exports made to France figured for 186,825 tons, 160,656 tons, and 153,571 tons respectively. In the two months preceding Feb. 28 this year our exports of coal footed up to 1,380,809 tons, as compared with 1,287,312 tons in the corresponding period of 1869, and 1,257,397 tons in the corresponding period of 1868. In these totals the exports to France figured for 376,027 tons, 328,670 tons, and 324,466 tons respectively, so that the consumption of English coal in France would appear to be considerably increasing. The exports of English coal have increased this year to Russia, Sweden, Denmark, Prussia, France, Spain, Italy, and the Brazils; but they have decreased to the

Hanse Towns, Holland, the United States, and British India. The value of the coal exported from the United Kingdom in February was 311,782L, as compared with 332,276L in February, 1869, and 299,341L in February, 1868; and in the two months ending Feb. 28 this year 672,341L, against 647,617L in the corresponding period of 1869, and 655,662L in the corresponding period of 1868.

TIN IN AMERICA.—It has been officially announced by the Government of the United States that the tin mines of California are the richest in the world. The tin mining lands of California cover a space of 50,000 acres, and 23 openings have been made, from which the ore has been taken in abundance.

FILTERS, AND FILTRATION.—It has recently been shown by Dr. Frankland that filtration does not only remove matters mechanically suspended in the water, but comprises also a chemical alteration of dissolved material. In some experiments ordinary London sewage water was purified to such a degree that, in respect of organic substance, it actually equalled in purity the water supplied to London for domestic purposes. A committee has, therefore, been organised for the systematic examination of water filters, and to report fully upon them.

THERMO-PLASTIC PUTTY.—In a paper read before the Civil and Mechanical Engineers' Society, by Mr. B. M. Bauerfeind, on the renewal of King's-cross Station roof, it was stated the glazing putty used in this roof was that known by the above name, and manufactured by Sir W. A. Rose and Co., of London. It is peculiarly adapted for fixing the glass in roofs of railway stations, greenhouses, and other buildings where plate-glass and iron or wood sash bars are used. This putty hardens in a few hours after being used, but will, when exposed to solar heat, sufficient to cause expansion of the glass and metal, become plastic, and on cooling, again return to its original firmness, thus preventing the loss by fractures and leakage, which occurs so frequently, in places where the ordinary glazier's putty is employed.

SAFETY EXPLOSIVE COMPOUND.—Mr. P. A. BLAKE, of Highbury, has invented a new compound (rendered explosive by the aid of a suitable detonating powder or other fulminate), which consists of sulphur and chlorate of potash in the proportions of about two parts of the former to five parts of the latter. The above ingredients may be kept separate if desired in a dry and powdered state, and mixed by passing them together through a sieve in the above proportions when required for use.

CONSETT WATER WORKS COMPANY.

WANTED, OLD OR SECONDHAND RAILS, SLEEPERS, and OTHER MATERIALS, including switches and crossings, suitable for the construction of four miles of temporary railway.

Also, TWO LOCOMOTIVE ENGINES, 4 feet 8½ inches gauge; weight not to exceed 20 tons.

Also, THREE HUNDRED SIDE and END TIP WAGONS, 4 feet 8½ inches gauge.

Offers to be made in writing, addressed to Mr. JOHN GLEDSTONE, Secretary, Consett Water Works Company, Consett, county Durham. Company's Office, Consett, 4th April, 1870.

THE CRENVER AND WHEAL ARRAHAM UNITED MINES COMPANY (LIMITED).

WANTED, TWO COMPETENT UNDERGROUND AGENTS for these Mines, and ONE SURFACE AGENT. Applicants should forward testimonials to the Directors, at the offices of the company, 15, New Broad-street, London.

GEORGE H. CARDOZO, Secretary.

RESIDENT MINE AGENT.

WANTED, AN AGENT of experience in LEAD MINING, to RESIDE AT and TAKE CHARGE OF A SILVER-LEAD MINE in NORTH WALES.

Apply, by letter only, enclosing copies of testimonials, and stating terms, to Mr. T. R. COMYN, 31, Threadneedle-street, London.

TO SURVEYORS.

WANTED, a Person to TAKE THE CHARGE of PLANS of EXTENSIVE COLLIERIES and IRON MINES. Unexceptionable references required.

Apply, in the first place, by letter, to Mr. J. T. GREEN, Mining Engineer, Tredegar Iron Works, Monmouthshire.

WANTED TO PURCHASE, for the GREAT WHEAL LOVELL MINE, WENDRON, a SECONDHAND 60 in. cylinder STEAM ENGINE, with ONE BOILER, not less than 10 tons.

State price, and where to be seen, addressed to Mr. CHARLES BAWDEN, Police House, St. Day, Cornwall.

A N UNDER MINE CAPTAIN WANTED, to SUPERINTEND the OPENING OUT of an EXTENSIVE LEAD MINE. Must be an energetic and experienced man.

Address, J. H. MURCHISON, Esq., 8, Austin Friars, London.

TO SHAREHOLDERS AND CAPITALISTS.

A N ENGLISHMAN, a Mining Agent of large experience and conservative judgment, now in America, being about to visit Colorado, Nevada, California, Oregon, and Idaho, on business in his own profession, OFFERS HIS SERVICES to INSPECT MINING PROPERTY, or EXAMINE the FINANCIAL CONDITION of MINING CORPORATIONS, and REPORT upon the same.

For terms, &c., address "B 2," MINING JOURNAL Office, No. 28, Fleet-street, London.

A CORNISH MINING ENGINEER will VISIT the MINING DISTRICTS of COLORADO, NEVADA, HONDURAS, and CHONTALES during the ensuing summer, and is prepared to ACCEPT ENGAGEMENTS for the INSPECTION and SURVEY of MINERAL PROPERTIES in those districts.

Address, "B. S.," MINING JOURNAL Office, 26, Fleet-street, London.

A CORNISH MINING ENGINEER, of considerable experience in Home and Foreign Mining, Gold, Silver, &c., several years in Central America, can speak and write the Spanish language, being about to visit HONDURAS, GUATEMALA, SAN SALVADOR, and other Republics, is OPEN to INSPECT and FAITHFULLY REPORT on ANY MINES or MINERAL PROPERTIES, and is OPEN to ACCEPT the MANAGEMENT of ANY MINE or MINES. Unexceptionable references.

Address, "J. W.," care of Messrs. Pottie and Son, Royal Exchange, E.C.

A MINING ENGINEER, of sound experience in developing and managing Collieries and Iron Mines, is OPEN to an ENGAGEMENT as MANAGER, and can produce first-class testimonials. No objection to go abroad under suitable arrangements.

Address, "A. B. C.," MINING JOURNAL Office, 26, Fleet-street, London.

IMPORTANT TO CAPITALISTS.

T HE ADVERTISER is PREPARED to SELL or TREAT for WORKING a QUARRY of FELSPATHIC GRANITE, specially adapted for polishing or pottery. He is also in position to OFFER SETS of splendid CHINA CLAY, and a bona fide TIN MINE, where the ore in reserve is estimated equal to £5000.

For particulars, apply to "D. W. J.," Post Office, Tavistock.

TO PROMOTERS OF PUBLIC COMPANIES, &c.

T HE ADVERTISER holds a VALUABLE TRACT of MINERAL LAND, including MINES, containing SEVENTY PER CENT. COPPER and TEN PER CENT. GOLD. He wishes to MEET with RESPECTABLE PARTIES to FORM a COMPANY. The property is situated near a sea-port, and a railway is just being completed in the district.

For particulars, address "South America," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

TO CAPITALISTS, COAL PROPRIETORS, AND OTHERS.

T HE OWNER of a CONSIDERABLE EXTENT of MINERAL LAND, producing FIRST-CLASS COAL, is DESIROUS of the CO-OPERATION of ONE or TWO CAPITALISTS to DEVELOPE the SAME.

Apply, for particulars, to JOSEPH SIMPSON, Accountant, 17, Pavement, Finchley, London, E.C.

COPPER AGENCY for WESTPHALIA, GERMANY.

WANTED, by a person who is INTIMATELY ACQUAINTED with BRASS, WIRE, and SHEET MANUFACTURERS. With equal prices, will always have the preference. London reference.

Apply early, with full particulars, to "B. K.," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

SULPHATE OF BARYTES, of good quality, FOR SALE,

f.o.b. at a port in Ireland.

Apply to Mr. PARRY, St. Michael's House, St. Michael's-alley, Cornhill, London.

WANTED, a 40 ft. WATER WHEEL, 3 ft. 6 in. to 4 ft. breast.

Address, stating lowest price and full particulars, to "A. B.," Post Office, Taliesen, Cardiganshire.

The Piel Hematite Iron Company (LIMITED).

To be incorporated under the Limited Liability Act.

CAPITAL £100,000, IN 1000 SHARES OF £100 EACH

(With power to increase to £150,000 if necessary.)

A deposit of £10 per share to be paid on allotment. Subsequent calls at intervals of not less than two months, to the extent of seven-tenths of the entire capital—the remaining portion to form a reserve.

DIRECTORS.

Lieut. Col. H. RIGG, Cross Rigg Hall, Penrith.
FRANCIS PARKER, Esq., Acorn Bank, Penrith.
JOHN BEATSON, Iron Merchant, Sheffield.
E. TALBOT, Esq.—MANAGING DIRECTOR.

(One more to be added.)

BANKERS—THE LANCASTER BANKING COMPANY.

SOLICITOR—LAWRENCE HOLDEN, Esq., Lancaster.

AUDITOR—H. C. BELOE, Esq., Liverpool.

SHAREBROKERS.

Messrs. H. BAZETT JONES AND SONS, Preston.

Messrs. WOLFENDEN AND GELL, Corporation-street, Manchester.

SECRETARY AND ACCOUNTANT—MARDON THOMAS, Esq.

The object in establishing this company is for the purpose of erecting furnaces and smelting the richer ores of Ireland in combination with the hematite ores of the Furness district. The annual produce of the latter cannot be less than 900,000 tons per annum, a large portion of which is sent out of the district, instead of being consumed therein, which can now be done with advantage and profit.

A site for the works has been selected in the vicinity of Piel (adjacent to the iron ore pits, and near to the large establishment of the Barrow Hematite Steel Company), which offers every facility for the successful development of the enterprise. The close proximity of the shipping port and extensive docks of Barrow, together with the harbour of Piel, will enable pig-iron to be dispatched, and the Irish ores to be received, with advantage to the concern.

Provision will be made in the Articles of Association by which mining property in the district, and other suitable localities, may be worked by the company. Leases of hematite property, embracing some hundreds of acres, in the Furness and other districts, are now under consideration, with a view to their being transferred to this company on advantageous terms.

A considerable portion of the capital has already been subscribed, and arrangements have been made with a gentleman (who will act as managing director), possessing long and valuable experience, by which every security will be afforded that the capital will be carefully and judiciously expended, and the subsequent working operations be conducted with caution and economy.

The company will be duly incorporated under the Limited Liability Act, by which every shareholder is responsible for the amount of his shares.

It is proposed to place the capital at £100,000, in shares of £100 each; to call up (say) £70,000 (in periodical payments, as may be required), and allow the remainder to form a reserve capital.

The cost of erection of three modern-built furnaces, with all requisite appendages, purchase of land, &c., will be £50,000, thus leaving of the called-up capital £20,000 as a working fund.

The cost of making iron will be about £2 12s. 6d. per ton, and the selling price is now £3 per ton at existing works; so that upon a weekly output of (say) 1020 tons on the average (that is, after allowing for the variations of the Iron Market), from three furnaces, good profits will accrue to the proprietors, equivalent to return, on the average, of 15 per cent. per annum.

The Furness Railway Company, whose main line passes the intended site, have kindly intimated their wish to render all possible assistance to the projected company.

The market for hematite pig-iron is now on the advance, and as it is the only class of iron employed in the Bessemer system, it is fully evident that a constant demand must exist, and continue to increase, for there can be no doubt, now that the Bessemer royalty has terminated, a great impetus will be given to this special branch of manufacture; its future requirements, therefore, will be very considerable, and as the production of hematite pig-iron must necessarily be restricted, it will be seen that a good and permanent prospect of success awaits this important section of the iron trade.

Applications for shares will also be received by the solicitor of the company, LAWRENCE HOLDEN, Esq., Lancaster, from whom prospectuses can be obtained.

FORM OF APPLICATION FOR SHARES.

To the directors of the Piel Hematite Iron Company (Limited).
GENTLEMEN,—I request that you will allot me _____ shares in the above company, and on receipt of notice of such allotment, I will pay to the bankers of the company £10 per share as deposit; and I undertake to pay any future calls as they may become due. I further request that you will place my name on the Register of Members for the shares so allotted.

I am, Gentlemen,

Name
Residence
Occupation

The Monte Albo Mining Company (LIMITED).

Incorporated under the Companies Acts, 1862 and 1867.

CAPITAL £100,000, IN 20,000 SHARES OF £5 EACH.

Of which 12,800 are to be A shares, to bear a preferential dividend of 15 per cent. per annum, and 7200 are to be B shares, which are to take a dividend of 15 per cent. per annum, if such is earned after A shares have received £15 per cent., and any arrears thereof. The remainder of net returns available for dividends over the 15 per cent. on both A and B shares respectively, and the payment thereafter of £1 per ton royalty on ores sold, to be equally divided on all shares.

The 7200 B shares, fully paid-up, being allotted to the vendors in part payment of the purchase-money.

The 12,800 A shares are offered for subscription.

Deposit on application, £1 per share. Payment on allotment, £4 per share.

In the event of no allotment being made, the deposits will be returned in full.

DIRECTORS.

PHILIP EDWARD BLAKeway, Esq. (Director of Devon Great Consols Mines Company).

CHARLES CHAMBERS, Esq., 3, Westminster Chambers, Victoria-street, S.W.

GEORGE SHEWARD, Esq. (Chairman of the English and Foreign Credit Company), 17, Leinster-square, W.

Major JELF SHARP (Chairman of the Australian United Gold Mining Company), Junior United Service Club, S.W.

Sir ALFRED FREDERICK ADOLPHUS SLADE, Bart., Maunsell House, Bridgwater—14, Cromwell-place, South Kensington, S.W.; Army and Navy Club, Pall Mall.

(With power to add to their number.)

BANKERS—Messrs. BARNETTS, HOARES, HANBURYs, AND LLOYDy, 60 and 62, Lombard-street, E.C.

SOLICITORS—Messrs. COPE, ROSE, AND PEARSON, 26, Great George-street, Westminster, S.W.

BROKERS—Messrs. P. W. THOMAS, SONS, AND CO., 50, Threadneedle-street, E.C.

CONSULTING ENGINEER—THOMAS J. BEWICK, Esq., Civil and Mining Engineer, M. Inst. C.E., F.G.S., 27, Great George-street, Westminster, S.W., and Haydon Bridge, Northumberland.

AUDITORS to be appointed by the shareholders at the first general meeting.

SECRETARY (pro tem.)—R. M. CUNNINGHAM, Esq.

OFFICES, —110, CANNON STREET, E.C.

This company is formed for the purpose of acquiring by purchase and for working and further developing the important and highly productive silver-lead mines, known as Guzurra and Su-Ergiolu, situated in the commune of Lula, district of Nuoro, Province of Sassari, Island of Sardinia, held under a concession of his Majesty the King of Italy, dated the 12th January, 1868.

The concession gives the right of working the minerals in perpetuity (free of royalty or any payment except export duty) over an area of 880 acres. The property was purchased in 1862, and the work of exploration commenced six months after, and has since been continued, and the mines are now in full operation. Accommodation for several hundred workmen, together with offices, workshops, stables, and stores, have been successively provided and erected.

Connecting roads between the mines and an excellent road to the Port of Siniscola, distant about 22 miles, have been constructed, and stabling, stores, &c., have been erected for the relays of horses (for the transport of ore and materials to the mines) on the road and at the Port of Siniscola, at a cost of £8000.

Up to June, 1869, a very large sum in addition had been expended in developing and working the mines; besides the original cost of the property and concession.

These mines, hitherto explored and developed solely through private enterprise, are in thorough working order. Their richness is fully proved by the results and the report of Thomas J. Bewick, Esq., Civil and Mining Engineer, M. Inst. C.E., F.G.S., and they promise, under fair management to rival, if not surpass, the celebrated lead mines of Monte Vecchio, and those of Monte Ponti, also in Sardinia, which are well known to have returned for many years very large profits to their shareholders, and which continue in the same prosperous condition without any appearance of exhaustion.

The following are the returns of the mines from the commencement, as extracted from the vendor's books:

Year ending 30th June, 1864	Tons	85
ditto	1865	217
ditto	1866	1176
ditto	1867	2141
ditto	1868	3429
ditto	1869	3444

Mr. Bewick says—"In the future of these mines there are good grounds to be hopeful. The known richness of the veins at Su-Ergiolu and Guzurra, the prospects of further discoveries in following the proved veins to the east and west of the existing workings, and by the deep adit and the development of the ledges lying to the north, induce me with confidence to fix the average produce at 6000 tons per annum for many years to come. It is possible, nay probable, that this yield may be greatly exceeded, but in a matter of this character I prefer to rather under than overstate what is, as in all mining matters, a somewhat speculative estimate."

He also states, under date 26th March, 1870—"The working and further development of these mines are, in my opinion, likely to prove one of the soundest and most permanent undertakings of the kind; and being in full working order, and yielding large quantities of lead ore at a high rate of profit, without the necessity of any great outlay in exploration or machinery, they are in a dividend paying condition at the outset."

The present returns, which are in excess of the quantity (6000 tons) stated above, give the property a character for solidity and soundness seldom found in mining operations.

A provisional contract has been concluded with two of the directors on behalf of the company for the purchase of the concession and property, comprising as follows:

1st. For the purchase of all the rights and privileges conferred on the vendors, by Royal concession, of the said mines, given in their favour in Florence, the 12th January, 1863, by His Majesty Victor Emmanuel, King of Italy, together with any extension of the said concession which may be granted to them.

MONTE ALBO MINING COMPANY (LIMITED).

Notice is hereby given, that the LIST OF APPLICATIONS FOR SHARES in this Company will be CLOSED on WEDNESDAY, the 13th instant, for LONDON, and on THURSDAY, the 14th instant, at Four o'clock, P.M., for the COUNTRY.

110, Cannon-street, London, E.C., 8th April, 1870.

By order, R. M. CUNNINGHAM, Secretary (pro tem.).

NOTICES TO CORRESPONDENTS.

* * * Much inconvenience having arisen in consequence of several of the numbers during the past year being out of print, we recommend that the Journal should be filed on receipt: it then forms an accumulating useful work of reference.

DRESSING ORES.—Can any of your correspondents inform me, through the Journal, whether the proposition for separating ores from the refuse by the use of air instead of water has ever been carried into effect, and, if so, where a pneumatic ore-dresser can be seen in England in operation?—R. S.

SLATE REFUSE.—The disposal of the enormous quantity of refuse made at slate quarries frequently costs an amount which is distributed amongst the shareholders would be equal to a fair dividend upon the outlay made upon the quarry. Not only does the refuse yield no return, but the money has to be paid for tip-room in addition. So much has been done late years in utilising waste products that I am surprised no effort has been made to utilise slate. As it is easily reduced to very fine powder, I should think it might be readily manipulated. I believe that if it were mixed with lime, and reduced to an almost impalpable powder, it would prove a very good material for footpaths, &c., where solidity and strength are desired. This powder made into mortar or concrete with good coarse gravel would make a most durable compound. The only question is the cost of grinding the lime and slate dust and burning it to render it fit for use, but I should think these are not unsurmountable difficulties.—K. G.

BARTVES.—In last week's Journal "B. M. C." requires information relative to the market value, &c., of Bartves. As a mining engineer, and connected with the bartves trade, I may reply that the quality of bartves varies greatly, some being worthless—its price depends greatly on its position also. If the bartves be of good quality, and can be raised for 2s. 6d. per ton, "B. M. C." may fairly expect good remuneration. The best plan would be to take the opinion of some competent person as to the quantity and quality of his article. Details permitting, I could take large quantities off "B. M. C.'s" hands.—A. R. S.

SHARE DEALING.—We never interfere in the sale or purchase of shares; neither do we recommend any particular mine for investment or speculation, or broker through whom business should be transacted. The addresses of most of the latter appear in our advertising columns.

THE MINING JOURNAL, Railways and Commercial Gazette.

LONDON, APRIL 9, 1870.

BRITISH MINING A PROFITABLE INVESTMENT.

The present position of British Mining interests generally must be gratifying and reassuring to all parties engaged therein; this satisfactory state is, however, no more than we had all along predicted as a natural sequence to the undue depression under which they had laboured during the last few years. All kinds of speculative properties have suffered the same or kindred causes. Many have not yet, and probably never again will, recover the position they once held in public estimation. Under these adverse, trying circumstances mining has been proved to be not only the most remunerative but the most secure channel for investment that can be adopted.

Taking these views of the subject, it may be well to consider the causes which led to so serious a reverse as that to which we have alluded, and to study the reasons why a long course of prosperity for the future is probable. Foreign competition has been very generally considered one of the primary sources. The great panic in the money market, however, was undoubtedly the principal element of the disastrous effects. It must be admitted that these results partially originated from over anxiety for speculation, causing many adventures to be brought forward that never should have been. Again, many schemes were introduced (in too many instances by not over-scrupulous originators) which could not by possibility be rendered remunerative, either in the time or with the amount of capital mentioned in their several prospectuses; these, however, are conditions to which all classes of speculative properties are necessarily more or less liable, and one by no means peculiar to mining companies. If we look at the prodigious numbers of schemes of all sorts that have been registered since the Limited Liability Act has been in use we shall find the fact that the interests we specially advocate have stood the tests of time and circumstances better than any others, and that less capital has been sunk therein than in any series of joint-stock companies that have been formed. Mining has yielded many grand prizes as rewards of perseverance, whilst the majority of those not yet arrived at maturity, or become remunerative, have attained positions that will eventuate in successes.

We could quote instances in which almost fabulous sums have been realised by fortunate and judicious adventurers, such, indeed, as no other class of speculation can attempt or hope to equal; no doubt can be entertained but others quite as rich are in store for the future. To use a mining maxim, "There are as good fish in the sea as have been taken out." The excessively low prices of metals and of metallic ores, consequent on the stagnation of trade during the panic, have been, as we predicted, only temporary, merely the vicissitudes to which all workable properties are periodically liable; reaction under such circumstances was as sure to set in as that tomorrow's sun will appear. It has been proved now by dearly bought experience that foreign ores cannot be imported at prices below those at which British ores can be wrought advantageously in well selected and carefully conducted mines. Present prices of metals and minerals are at fair quotations, at which we may expect and hope to see no undue variation; speculation may, however, cause partial vexances, which will again ensure reaction.

Another cause of probable prosperity is that the Mining Maria has been well cleared of bubble concerns, the science of mining better understood, prejudice shaken, new districts rich in mineral ore being opened up, new companies formed to re-work (under good advantages) some promising sets which were obliged to be abandoned from the untoward circumstances before mentioned; caution has been engendered by the severe lessons of the past—that necessary development to success, although dearly purchased, cannot be said to have been so in vain; it was, perhaps, never more needed than at present, when so many undertakings are being brought forward, and probably there never was a time when so many really genuine affairs were introduced, or there were greater chances of permanent success.

Notwithstanding all these favourable conditions we, as journalists, cannot in our duty close our remarks without reiterating the advice we have often given to our readers—use caution in the selection of the mines and the projectors, and consider whether the would-be-adventurers possess the needful qualifications to undertake the responsibilities of their engagements, irrespectively of any promised result or adverse circumstances. These conditions fulfilled, we dare pronounce British Mining enterprise to be at once the safest and most remunerative investment that can be selected for unemployed capital.

GOVERNMENT INSPECTION OF MINES.

The coalmasters' interest in connection with the Mines Regulation Bill was thoroughly discussed at the Preliminary Meeting of Ironmasters at Birmingham. The amendments suggested by the Mining Association were considered highly desirable, and the opinions were very strong with regard to the clause throwing responsibility for accident upon the owners and agents, instead of upon the person who is the immediate cause of an accident. Precisely the same view is taken by the mine agents; and the South Staffordshire and East Worcestershire Institute of Mining Engineers have been exerting themselves to ensure practical effect being given to their opinions; they have addressed a letter to the local members, pointing out the difficulties under which they would labour. They do not doubt that the intention of the framers of the clause is to provide a summary remedy, with an adequate punishment, for cases of gross and wanton neglect; but anyone who has followed the working of even the existing enactments in the Staffordshire district must, they think, be satisfied that such a power of imprisonment cannot be entrusted to justices in Petty Sessions without exposing mine owners and agents to risks calculated seriously to fetter mining enterprise, and depreciate mineral property. It is notorious that the stipendiary magistrate of this district (before whom mining prosecutions are usually brought) holds mine owners, even though entrusting the management of their mines to the most competent agents, to be punishable for any neglect of such agents, and in like manner makes the latter liable for their subordinates; so that they consider should the clause be

framed, pass into a law, there is no mine owner or agent in the district but will run the risk of imprisonment for the carelessness of some inferior.

The colliers are equally energetic; they are circulating a list of the amendments they seek to get adopted amongst the members, and have already secured considerable support. They propose:

1.—That the Mines Inspection Act be extended to all coal mines, ironstone mines (except hematite), and shale mines, as moved by Lord ELCHO.—Reason: The ironstone mines and shale mines, which are not embraced in the proposed Bill, contain gases in some instances explosive—all carbonic acid gas—which is highly prejudicial to human life. The machinery at most of them is of the same character, and ought to be under the same inspection.

2.—LENGTH OF HOURS: In clause 6 of the Bill it is proposed that children may be employed 12 hours, with an interval of not less than 10 hours from each period of employment, from 12 to 16 years of age. We desire that children above 12 and under 14 shall not be employed more than 50 hours in any one week, and not more than 12 hours between each period of employment; that from 14 until 16 they shall not be employed more than 26 hours in any one week, and not more than 12 hours in any one day, and an interval of 12 hours between each period of employment. Amendment to be moved by Lord ELCHO.—Reason: The proposition in the Bill might lead to children being employed in mines 12½ days more in the year than in factories. The proposition as to giving an hour and a half interval for meals is utterly impracticable—10,000 inspectors could not carry it out.

3.—EDUCATION: The Bill does not provide for education. We desire that all children employed below ground or above ground, connected with mines, between 12 and 16 years of age, shall attend school not less than 10 hours every week. To be moved by Lord ELCHO.

4.—WAGES: In clause 2, line 35, it is proposed that wages shall be paid in money only. We desire that it shall be inserted that the wages shall be paid weekly, and within eight days of the last day of the week in which such wages have been earned. Amendment to be moved by Sir ROBERT ANSTRUTHER.—Reason: Pays in many places are now monthly and fortnightly. The long pays are generally connected with the truck system, which has a most demoralising and debasing influence on the mining population.

5.—WEIGHING THE MINERS' MATERIAL: In clause 12, line 9, it is proposed to use and allow measuring and gauging. We desire that measuring and gauging be struck out in that line, and other lines to the end of the clause, and that the standard weights only be used; these to be under the supervision of the district inspector of weights and measures, as stated in the bill. We desire at the same time that the person employed by the workmen shall have every facility for taking a correct account for those by whom he is employed. The omission and insertion of the words to be moved by Lord ELCHO.—Reason: The want of a true system of weighing the quantities of coal and iron has been productive of many of the unfortunate disputes that have taken place in the mining districts; it is at the present time a source of continual irritation.

6.—GREATER VIGILANCE IN THE MANAGEMENT OF MINES: It is desired that more vigilance be shown in the management of mines. It is proposed at the end of rule 19, clause 18, page 8, and line 31, to insert as rule 20:—That a daily inspection be made of the mine; that a record of the same be kept. An abstract of the record to be sent to the inspector of mines every four weeks. To be moved by Lord ELCHO.—Reason: A register so kept would be in itself a reference in case of any accident taking place, which would at once indicate whether every precaution had been taken for human safety.

7.—TRAINED MANAGERS: We desire agents or managers should be trained, and certified that they are competent to take the responsibility upon themselves of agents or managers of mines. To be moved by H. B. SHERIDAN.—Reasons: The universal testimony of the inspectors of mines point to this as a necessity. The admission of Mr. BRUCE, in introducing the Bill, and the late Dukinfield Explosion.

8.—PROPWOOD: We desire that wherever propwood is required, that the wood shall be cut, and placed close to where the workmen are employed. To be moved by H. B. SHERIDAN.—Reason: Workmen having to bring forward their own wood leads to a great destruction of human life.

9.—REGISTRATION OF AGENTS OR MANAGERS OF MINES: The want of knowing who is the authorised agent or manager of a mine or mines is often a source of great inconvenience to the workmen, and to others. We desire that after the passing of the Act, the names of the authorised agent or manager of every mine or colliery shall be deposited in the hands of the inspector. And the appointment of any new manager or agent to be recorded in the same way. To be moved by W. T. CHARLEY.

10.—INCREASED INSPECTION: In clause 38 in Bill, page 17, line 12, we desire that it shall be inserted—that the inspector shall make a visit to every mine in his district at least once in every six months. To be moved by Mr. T. HIBBERT.—Reason: Universal testimony of coroners' juries and the public generally, that the present system of inspection is inadequate to protect underground workers.

EJECTOR CONDENSORS—ALLEGED INFRINGEMENT OF PATENT.

In the Chief Scotch Law Court, before the Lord President and a jury, an action was raised which occupied their attention from March 23 to 30. The pursuers were NEILSON and Others against BARCLAY, whom they sought to restrain from using their alleged "improvements in the lateral action or induction of fluids, and in the apparatus or mechanism employed therefor," by making, vending, or using the improvements in the lateral action or induction of fluids, and in the apparatus or mechanism employed therefor, described in a specification filed on January 14, 1868, and in particular from making, vending, or using any apparatus or mechanism for the condensation and ejection of steam constructed in the manner described in the specification. The issues sent to the jury required them to determine (in the light of the evidence adduced) whether, during the currency of the said letters patent, at Addiewell Oil Works, near West Calder, in the county of Linlithgow, at Fauldhouse Pit, in the county of Linlithgow, and at the defendant's works, Caledonia Foundry, Kilmarnock, in the county of Ayr, or at one or more of said places, wrongfully, and in contravention of said letters patent, use the invention described in said letters patent and specification. The trial, which lasted over seven days, resulted in the following verdict:—

"The jury find that under the issue for the pursuers the letters patent have been infringed at Addiewell Oil Works, at Fauldhouse Pit, or at the Engine Foundry at Kilmarnock, but that the patent has been infringed by the defendant at the large engine in the fitting-shop at the defendant's works at Kilmarnock: Find, that the improvement in the Giffard injector is a new invention as claimed by the pursuer in the specification, and find for the pursuers under the three alternative issues for the defendant."

In looking carefully into this decision, while it is satisfactory to note that the patentees have had decided in their favour all that their patent covers, it is to be regretted that the heads of the Patent Office are not sufficiently informed on all subjects of patents so as to prevent their authorisation being given to contrivances already even partially in use. Of the three instances of alleged infringement of patent the jury found for the respondent on two of them, and for the complainants on only one. This makes it plain that the complainants must have patented more than they were entitled to do, or misconstrued the import of their privilege. The respondent averred that the alleged invention did not consist of improvements in the lateral action or induction of fluids, but of improvements in steam-engines, and improvements in injectors; and that the complainants were not the first and true inventors of the alleged invention. Inventions or contrivances similar to or substantially the same were described and disclosed in Letters Patent granted to various persons which the respondent named, and were publicly used in Great Britain prior to the date of the said letters patent. The jury adopted this view of the case, so far as is indicated in their verdict, given above, and relieved the respondent of the consequences; but this was done at an expense which would have been wholly avoided if the Patent Office had been able to eliminate from the specification those portions of the contrivance which had been the subject of previous patents, and which were alleged by the respondent to have been in "public use" previous to the date of the letters patent, which gave rise to this action. Mechanical ingenuity is entitled to be as efficiently protected as ingenuity in letters or in art; but care should in every instance be taken, both by the Patent Office and the patentees, that in securing or authorising patents they are neither trenching on the inventions of others, nor infringing on rights already the property of the public.

IMPORTANT DISCOVERY OF MINERAL LODES NEAR BRIDGWATER.—A few months ago the outcrops of three lodes were discovered crossing an old lane near the secluded village of Spaxton. The lodes revealed, nearly up to the roots of the grass, extraordinary evidences of richness for lead and copper, and as some Cornish miners, working a few miles off at the Brendon Hill Mines, became acquainted with the discovery, sharp competition for the sett quickly followed. It appears that some private parties residing in Bristol succeeded in obtaining it on very favourable terms—from Mr. J. WINTER, J.P., the landowner—and immediately commenced exploring. Another north and south masterlead lode parting the entire strata (which is highly mineralised kyllies) was discovered. This dips towards the other lodes, which will not be very deep. It is a rare thing for lodes to yield paying work very near surface, but already considerable quantities of mundic have been worked, and several tons of it have been sold for sulphur ore, and sent off by rail

from Bridgwater to manure works in Wiltshire, for making oil of vitriol. It contains some copper, although as yet the operations are quite shallow, and the quantity of lead in the lode increases every foot the miners sink deeper, so that ultimately it is intended to sell the ore for lead smelting at a much higher price. A good amount of silver is associated with the ore. The sett being extensive, it is capable of yielding permanent supplies of mundic, to be worked from the upper lodes, and as it can be delivered at Bridgwater for nearly half the price usually paid by vitriol makers it is not improbable that some manure merchants may erect burners and chambers for making vitriol in that neighbourhood. The sett is on a steep declivity, and will be very economically worked, as it commands deep free drainage from the hill side. It is said that the nature of the strata is very congenial to silver-lead and copper, and exactly corresponds to that which has been proved to give rise to the most profitable mines in Cornwall. There are some rumours that as the sett admits of extensive working, in which capital may be advantageously employed, a public company may be some day formed to multiply the profits; and, if so, it is expected from enquiries for shares which have accompanied the explorations that most of them will be taken up in the district. We wish the mine complete success, as its prosperity will greatly improve trade all around the neighbourhood.

THE DRESSING OF LEAD ORES.

BY MR. T. SOPWITH, JUN., M.I.M.T. C.E.

This communication* was limited to a description of some works the author had had occasion recently to establish in Spain, for the Dressing of Lead Ores, as a general account of the present state of such operations in England could not be satisfactorily given in a single paper. Moreover, as regarded this branch of mechanical engineering, Germany was in advance of England. By dressing was to be understood the art of obtaining from the raw material extracted from the mine, called bouse or mine stuff, the pure ore it contained, to the rejection of the impurities with which it was associated. Bouse might be said to yield, in an ordinary way, from 5 per cent. to 25 per cent. of galena, which when pure had a specific gravity of 7.75, and produced 86 per cent. of metallic lead. The lead ores of commerce were usually dressed to a tenor of from 74 per cent. to 78 per cent., though argentiferous ores were frequently delivered with a lower percentage. All galena was mixed with silver; but the term argentiferous was only applied to that in which there was upwards of 12 ozs. of silver per ton. In dressing, the principle applied was that of separating the lead ores by means of their greater gravitation. This operation was easy or difficult, according as the accompanying impurities were of greater or less specific gravity.

At the works referred to about 350 tons of lead ore were prepared per month. There were two dressing-floors, the higher and the lower. On the former manual labour was principally employed. On the lower floor the stuff was treated which required to be passed through the crushing-mill; and it was more particularly this machinery and method that it was the purpose of this paper to describe. On the higher floors from 200 tons to 220 tons per month were prepared, or two-thirds of the entire quantity. Two systems of paying the miners were adopted in mineral mines; one, by "tribute" or "bingtale," where the men were paid in proportion to the amount of clean ore the mine stuff excavated by them produced; the other, "tutwork" or "fathomtale," where they were paid by measurement. The adoption of the former system introduced complication, and more expense in the dressing operations than the latter.

The author, in describing the various machines, and the quantities of work they could deal with, fixed as a standard the richness of mine stuff treated at about 12 per cent. (by weight), equal to work which would be known in the North of England as producing 2½ bings per shift.†

The washing operations commenced by turning a stream of water into the "teams" containing the "bouse," which was raked out by a man on to a grate, and there hand-picked. The author used two grates, the higher one with spaces of 1 in., and the lower one of ¼ in., in preference to one grate with spaces ⅛ in. wide, as usually employed. The stuff passed through the second grate into a stirring trunk, where a partial separation of the coarser particles from sludge and slime was effected. The coarser particles were of a size convenient for hotching, and the common hotching tub could treat from 8 tons to 10 tons of stuff per day. Between the waste, which was wheeled away, and the pure ore there was an intermediate layer of what was called "chatt," consisting of particles mixed with ore which could not be separated without further subdivision. This was effected by means of a crushing-mill. In England from 25 tons to 30 tons was a fair day's work to pass over one grate. The author found, by the use of two grates, that 40 tons could be passed, without any increase of labour, at a cost of about 2s. 6d. per ton of clean ore produced.

The ore which passed through the coarse wire bottom of the hotching sieve accumulated at the bottom of the tub, and was called "smiddum." This was rendered fit for market by further preparation in the plain bundle. The sludge deposited in the trunks attached to each grate was prepared in a round bundle. A separation having first been made of hard lumps, small stones, or chips of wood, &c., the sludge was delivered at the centre of the bundle, accompanied with water. The bottom being inclined outwards about 1 in 10, the particles were carried by the water in that direction, the heaviest and richest being deposited nearest the centre. The bundle described was larger in diameter, and treated nearly four times more stuff than that usually employed. The water, on leaving the sludge trunk, carried with it a certain amount of slime, which was deposited in pits, and was subsequently treated in a machine called a Brunton's cloth, the action of which was described, as also of the dolly tub, by which the slimes, after being concentrated in the Brunton's machine to about 45 per cent., were further enriched to about 70 per cent., and so delivered for sale. The crushing-mill in common use in England was described, and the inconvenience attached to it, as compared with the simpler form used in Germany, was pointed out. In the apparatus that had been referred to it was probable that about 80 per cent. of the lead ore produced in England was prepared.

On the lower, or crushing-mill floors, which the author had erected, some attempt had been made to secure continuity of action by the use of self-acting machinery wherever it was possible; though, from the circumstance of Spanish labourers being employed, who were totally unaccustomed to the use of machinery, it was necessary that the machines should be of the simplest kind. The stuff which required crushing was conveyed in wagons to the lower floors, being first broken to a size which would pass through 5-in. ring. This was effected by manual labour, in preference to a stone-breaking machine, as the former allowed of a separation of a small quantity of pure ore, and of a large quantity of waste, which would afford unnecessary work for the crushing-mill. The stuff, after being emptied from the wagons into the hopper of the crushing-mill, was passed through the rollers, and, when crushed, was elevated by a Jacob's ladder, and delivered into a classifying trommel, composed of two shells, an outer one of perforated iron plate, with holes 1½ millimetre in diameter, and an inner one with holes 10 millimetres in diameter. The crushed material was delivered into the inside of the trommel at one end, and passed onwards, the trommel being inclined. All the sludge and slime were got rid of through the outer shell, the inner shell retaining and delivering apart any particles over 10 millimetres in diameter. These were returned to the crushing-mill, to be again passed through the rollers, and the particles, ranging in size between 1½ millimetre and 10 millimetres, were delivered at the further end of the trommel, and passed on to a second, or sizing trommel, composed of one shell only, and were then sub-divided into four sizes—2½, 5, 7½, and 10 millimetres, each size being treated in a separate hotching tub.

For the operation of hotching, the convenience of having all the particles treated of one, or nearly of one, size was obvious, and in some cases of refractory ores it was a necessity. The hotching machines employed are entirely self-acting, and continuous in action, fast and a loose pulley being attached to each machine. Contrary to the form adopted in England, the sieve was stationary, the water being put in motion by means of a loosely fitting piston. The stuff was delivered into a small hopper, and travelled the length of the sieve, a distance of 28 inches, by which time a perfect separation is

* Read at the Institution of Civil Engineers, April 5.
† A bing was 8 ewts. A shift was eight wagons, carrying about 1 ton each.

effected. It had been found advantageous to increase the length of the stroke and the number of strokes per minute for the larger sizes. By an ingenious movement a quick down stroke and a slow return stroke had been given to the piston. The crushing-mill was more compact than the form used in England, the rollers being kept in contact by the compression of India-rubber buffers in place of a long lever, with a heavy weight attached. The sludge, which passes through the holes of 1½ millimetre in diameter in the first, or classifying trommel, was delivered into a separator—an iron cylinder about 2½ ft. high—where it met a stream of water of sufficient strength to carry the smallest and lightest particles upwards, and deliver them into a launder, whence they were conveyed by the water to the sludge trunks and slime pits, and were subsequently treated in round bundles and in Brunton's cloth. The coarser particles were prepared by manual labour in a common trunk or tie.

The amount of work crushed and prepared on the lower floors was about 55 tons per day of ten hours. The actual cost in Spain was 2½, 2d., but the equivalent of labour would be performed in English mining districts for 13s., the latter sum being at the rate of 2½d. per ton of raw material treated, or 2s. per ton of clean ore produced. If, however, self-feeding apparatus was introduced to supply the hotching machines, which could easily be done, the latter cost might be reduced to 2½d. and 1s. 5d. respectively. The cost of preparing similar work in England, with machine crusher and machine hotchers, was, the author believed, about 2s. 6d. per ton of clean ore. The whole of this machinery was driven by a 10-horse power portable engine, supplied by Messrs. Ransomes, Sims, and Head. The cost of erection of the crushing-mill floors complete, including the engine, was about 1500L. The same arrangement in England would have cost about 1200L. Most of the machinery was supplied by Messrs. Sievers and Co., of Kalk, near Cologne. No separate crushing mill for the preparation of "chatts" had been erected, as when the "chatts" had been allowed to accumulate the present machinery could be adapted for their treatment in an hour or two, advantage being taken of a time when new rollers had been put in.

The author observed that whereas in England the machinery employed in dressing operations was for the most part made at the mine with the ordinary staff, in Germany there were manufactories giving employment to 400 hands, dedicated almost exclusively to the construction of dressing machinery; and it was not surprising to find in the machines issued from them better proportions, greater elegance, and more efficiency and durability than those used in the mines of this country. The machinery described in this paper had been in use for two years, and, having given good results in Spain, no difficulty need be feared in its application elsewhere.

REPORT FROM THE NORTH OF ENGLAND.

Middlesborough, April 7.—There was a usual attendance on Change here on Tuesday, and a rather buoyant market. Pig-iron was in quick demand, but stocks throughout the district are comparatively low, and iron for immediate delivery is not easily obtainable. Foreign requirements are heavy, and a large quantity of iron has recently been sent to Belgium, Germany, and France. Home demand is also large, and makers are being much pressed for deliveries. Prices are naturally firm, and have an upward tendency, 53s. 6d. No. 1, 50s. to 50s. 3d. No. 3, and 49s. to 49s. 3d. No. 4, net cash, on trucks and f.o.b., were yesterday's quotations. The make of 104 furnaces now in blast is well kept up; but, notwithstanding the immense production, stocks are expected to show a reduction for March. The ironmasters' return for the month has not been issued yet, and we are, therefore, unable to give the figures. Warrants are quoted at 49s. 6d. to 50s. net cash. The stock in warrant store is further reduced this week to 24,144 tons, being 540 tons less than it was on March 29. For rails specifications are reported to be plentiful, American and Russian demand being very considerable, and fresh orders are said to have been booked by Cleveland manufacturers within the past few days, and further orders are being negotiated for delivery during this navigation. The large stock of rails now lying at the different rail makers' yards will, in the course of a little while, be considerably diminished, as by the middle or end of this month the Russian season will have commenced. Makers of railway iron are in full work, and will, no doubt, continue so for some months to come. Iron shipbuilders are also busy. A fine new screw, of 1200 tons, was launched by Messrs. Pearce and Co., at Stockton, on Monday, and the other yards on the Tees are in full employment. Foundry business is looking up, and orders have recently been taken for new work by firms in this neighbourhood. There is talk of some new firms commencing in the Cleveland district for both pig and finished iron manufacture.

A meeting of the Board of Arbitration was held in the Exchange Buildings, Darlington, on Monday, when amongst other questions of the claim made by Boleskow, Vaughan, and Co.'s Wilton puddlers for an advance of 1s. per ton, in consequence of the alleged uncommon mixture of iron used at these works, was considered. The decision came to was that an advance in wages of 6d. per ton be granted. The Coal and Coke Trades are in a satisfactory position. The present weather is very favourable for shipping, and steam coal pits are making good time. The bindings are about all settled, and, on the whole, differences have generally been settled without much difficulty. The coke trade is brisk, and we hear the Messrs. Pease are thinking of erecting more ovens at their Pease's West Colliery.

REPORT FROM SCOTLAND.

April 6.—We have had another lively week in pig-iron, with a large business, advancing prices, and heavy shipments. We stated in the Journal of March 26, that if holders of Scotch pigs were successful in financing their warrants prices might be run up a few shillings a ton without much warning, and buyers are already drawn into the vortex of an ascending market. For the week ending yesterday, the shipments reached 19,080 tons, being the third largest weekly shipment recorded in the history of the trade, the two others being for the weeks ending—

March 22, 1870 20,005 tons.

April 19, 1864 19,722 "

Heavy as these shipments undoubtedly are, with melters also taking from our production, the returns show that on March 31 we had the enormous total of 353,379 tons of pig-iron in store, the greater portion of which was held by banks, and, perhaps, with a margin they could hardly hold a more vendible commodity. Of the above, there are warrants in circulation for 333,800 tons, leaving 20,000 tons yet to be rendered into warrants. During the week we had discharged a few tons of Spanish iron and heavy lots of copper ore at our quays. The sulphur in the copper ore is first utilised by Tennant and Co., at their St. Rollox Chemical Works, the copper is then extracted, and the residuum is used in a powdered state for fettling; or it is crushed, when wet, into brick-like moulds, to render it more solid, previous to being used in the blast-furnace. Last week closed with a strong market, and a large business doing, at 55s. 6d. cash, and 55s. 9d. a month. Monday opened better, and closed 56s. prompt, and 56s. 3d. a month. Yesterday prices still further advanced, and closed strong at 56s. 4½d. cash, and 56s. 8d. thirty days. This is an advance of 2s. a ton within the short period since we hinted at the likelihood of an advance, and those buyers who took our advice, and continue to hold, will all but certainly realise a handsome return. To-day there was rather more ease in the market, and only about 8000 tons were done, at 56s. 6½d. to 56s. 2d. a month, and 56s. 3d. to 55s. 10½d. cash, closing sellers shade higher. Coltness, 64s. 6d.; Gartsherrie, 64s.; Langloan, 58s.; Eglinton, 56s. 6d.—all No. 1 brand. No. 1, g.m.b., 56s.; No. 3, 54s. 6d. Not much business will be done till Tuesday next, on account of the half-yearly religious services at this season. Sinking operations are being carried forward at Armatdale, where Messrs. Wilson have leased the ironstone, and are preparing to work it. Manufactured iron is without any notable change, the hands of makers being full of orders. Since last week an order for 20,000 feet of 2½-in. lap-welded tubing has been offered for Canada, but we have not heard of its being placed.

The price of Coals is again firmer, and a full average shipping business is being done, the quantity sent seaward being for the week just ended 39,010 tons, against 38,765 tons in the corresponding week last year. With the return of fine weather there is less demand for domestic coal, but splint is in good demand, and increasing. There

has been no change made in quotations for this month, as was at one time feared. There have been private meetings of several of the coal-masters in the Wishaw district to consider the wages question. As we anticipated last week, a reduction in miners' wages is likely to be announced at next pay. The miners have had further meetings on the Mines Regulation Bill, and have signed petitions, in many instances, of which they did not know the import. However, they were docile, and did what their great leader demanded of them.

During March 19 vessels of 18,274 tons, British measurement, were launched from the Clyde shipbuilding yards, and since then several new contracts have been entered into. The National Steam-Ship Company of Liverpool have had launched for their Liverpool and New York service the largest merchant ship in the world, with the single exception of the Great Eastern. This Leviathan was named the "Italy," and has a carrying capacity for 3300 tons dead weight, and for 100 first-class and 1500 third-class passengers. Messrs. Merry and Cunningham have also had a small screw launched for their mineral traffic. We also launched at the close of last month an iron dredger for the Caliph of Bagdad, to be used on the great river Euphrates. Yesterday afternoon there was launched at Greenock a fine spar-deck steamer of 3538 tons and 600 horse-power, named the "Australia," for the Peninsular and Oriental Company. She has carrying capacity for 1800 tons cargo and 1000 tons coal, besides accommodation for a large number of first and second-class passengers. In launching the vessel, unfortunately, got on the bank, but was expected off next tide without damage. This is the largest vessel ever built at Greenock.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

April 7.—Since the decision at the Preliminary Meeting to make no change in prices, justified as it is by the strong position of the Iron Trade on the Clyde and Tees, and in South Wales, rather more orders have been given out, and the Quarterly Meetings, next week, are expected to show considerable vitality. It is stated that inducements are offered to Staffordshire ironworkers to go to the Cleveland district, but that they generally prefer to remain at home. No doubt, however, many younger men will go there. The Hardware Trades remain rather quiet, and in no branch is there much animation, though tolerably steady trade is being done.

There was more discussion at the Preliminary Meeting of Ironmasters last week in reference to the high rates charged for freights by railway and canal companies, but no progress seems to be made. The simple result of competition is that there is a larger capital to pay a dividend upon, and as the companies combine it is more difficult to effect any change. A strong opinion was expressed in opposition to some clauses of the new Mines Regulation Bill.

Mr. John Randall urges a subject of great importance, in suggesting that valuable seams of coal may be found near Market Drayton, which is now connected by railway with the Staffordshire Potteries. Mr. Corbet, of Adderley, with the advice of geologists who have paid considerable attention to the question, has been led to search for these rich mines at Child's Ercall, some seven miles from Market Drayton. One of the Memoirs of the Geological Survey, just published, and containing the very able researches of Mr. Hull, M.A., F.R.S., Director of the Geological Survey of Ireland, who has for years made the Triassic and Permian rocks of England his special study, throws some additional light on this subject; and not only are the hopes of the coal measures of North Staffordshire being continued in this direction strengthened, but the probabilities are greater that the depth at which they may be reached is less than had been anticipated. Should the expectations formed be realized a vast accession to the prosperity of the North Staffordshire district, and the adjoining part of Shropshire, must follow.

The South Staffordshire and East Worcestershire Institute of Mining Engineers decided, at their meeting on Monday, that their first summer excursion, to take place in June, shall be to the Belgian coal field, and to the famous Creuzot Iron Works. The section of the Mines Regulation Bill which makes the mine owner or agent liable to imprisonment for infringement of colliery rules, instead of to penalty only, was discussed with much animation, as the general feeling is that the pecuniary penalty is ample to ensure all reasonable care. The Institute are willing to give the framers of the Bill credit for their intention to provide for gross and wanton recklessness, but refer to their own district to show that the views of even stipendiary magistrates are sometimes so strongly in favour of punishing the highest they can reach that agents would but rarely escape conviction, though the chief fault might rest with a subordinate.

The North Staffordshire Coal and Ironmasters' Association Quarterly Meeting was held, on Thursday, at the Railway Hotel, Stoke-on-Trent. Mr. Wragge was in the chair. The meeting decided to make no alteration in prices. Finished iron was reported to be in steady demand, orders coming into the district in sufficient numbers to keep the works fairly employed. The report as to pig-iron showed the make of the district to be pretty fully sold for future delivery, and the prospect of the current quarter's production being taken for consumption. Sales of ironstone, which was offered at former rates, were stated to be of an average character. The committee appointed at a previous meeting to deal with the question of rates of carriage affecting the trade of the district made a report, and a long and animated discussion took place on the subject. Further instructions were given to the committee, with a request that they would continue their enquiries and investigations, and to enter into communication with the Chamber of Commerce on the subject if desirable.

The Dudley Correspondent of the *Wolverhampton Chronicle* writes:—

At the Preliminary Meeting of the Ironmasters of South Staffordshire it was agreed unanimously that the present list prices should remain as they are—marked common bars, at the works, 8*l.*; best bars, 9*l.*; sheets, 9*l.* 10*s.*; doubles, 11*l.*; nail sheets, 9*l.*; latten, 12*l.* 10*s.*; boiler-plates, 9*l.* 10*s.*; rods, 8*l.*; hoops, 9*l.*; gas-strips, 8*l.* 10*s.* per ton, and all other sorts in proportion. The above prices are only adhered to by the leading members of the trade. Second and third class makers are selling below these rates. The works are going on better than they were; this arises from the fact that it recently became known to the merchants that no alteration would be made in the declared official list of November. Another circumstance has transpired—that some of the North of England ironmasters are so full of orders that they cannot execute them without more hands; hence it is that they have been endeavouring to engage some of the workmen in these localities to go into the Cleveland district, where wages are higher, but this the men refuse, stating that they do not like the country, and would rather stay here, even at a lower rate of wages. This lack of hands in the North will, as a natural consequence, cause many orders to find their way into South Staffordshire and East Worcestershire, and will, as we have often predicted, be the means of keeping the iron works here in pretty full operation. We have frequently adverted to the fact that the list prices could not be interfered with on account of the difficulties which surround the question of wages, and under existing circumstances it was better to let things remain as they are. The demand for pig-iron has been somewhat stimulated in consequence of more orders coming into these districts. There still continues to be a fair demand for thick coal, and prices are well maintained. The requirements for household purposes have fallen off, but for the various works there still continues rather a brisk demand. The labour market has improved, and a considerably increased number of hands has been set on at some of the "fitting yards." There seems every possibility of a still increased activity.

REPORT FROM DERBYSHIRE AND YORKSHIRE.

April 7.—So far as regards the general state of the Iron Trade in Derbyshire there is very little to report, as there appears to be no change whatever since last notice. The demand for Coal, which up to nearly the present time has been active, has now given way, so far as household qualities are concerned. The trade to London has been very brisk, and a large tonnage has been sent over the Midland line; but the change in the weather has caused a falling off, so that no increase can be looked for now that the summer season may be said to have commenced, and during which merchants are not likely to keep stocks by them. In Steam Coal there is a slight change for the better, so that some considerable improvement must take place before long. A fair quantity of coal is being sent into Northamptonshire, for the use of the furnaces there, and from which a good deal of ironstone is imported. The collieries in the neighbourhood of Burton-on-Trent have been kept well going for some time. The men employed at the Norwood Colliery, belonging to the Sheepbridge Company, have asked to have returned to them the reduction of 2*d.* per ton which they submitted to in August last, when the trade was in a very depressed state. At the time the reduction was conceded it was promised to be returned when trade revived. In answer to the application, the manager has stated that in declining to give the advance it is because the present price of Hard coal would not justify the increase, and also because the company considers that they are paying as high wages, and that the men are earning as much money, as those at any colliery in the district. The company, however, are quite willing to refer the question of wages, and all other matters in dispute, to Arbitration, so that an amicable settlement will take place,

The Iron Works in the South Yorkshire district are kept well going, there being some few orders in hand for most qualities of manufactured iron. The Bessemer Steel Works, at Penistone, are also in full operation, and apparently have a long season of activity before them, more especially in rails. The House Coal Trade is decidedly quieter than it has been, although up to a week ago it was very brisk for the season. Steam Coal is now beginning to move, and preparations are being made for the usual summer trade, which generally becomes active in the early part of May, at which time the Baltic is usually open, and heavy shipments, besides the necessary coaling for steamers, are sent from the ports of Hull and Grimsby. There is a little more being done with Lancashire in engine fuel by the Manchester, Sheffield, and Lincolnshire Railway. From Goole, also, a rather larger quantity is being shipped to the Thames and the eastern ports.

A rather singular discovery was made a few days since at the Oaks Colliery, where the terrible explosion took place about three years ago. At a distance of about 900 yards from the bottom of the shaft Mr. Minto, the viewer, discovered an extensive crack in the solid coal and roof about an inch in width, extending for a considerable distance. How deep the crack extends cannot be ascertained at present, but Mr. Minto, to clear up the point, is going to have the seat of the crack excavated. It is generally thought that the crack was caused by the force of the explosion, when more than 300 persons were killed.

A number of mining engineers have been to see the place, as has also Mr. Dickinson, one of the Government Inspectors for Lancashire, and who explored the mine shortly after the accident. The sinking of the new pit in connection with the Oaks is proceeding satisfactorily, and it is said is not unlikely to be completed by the close of the year.

There is no change whatever at the Thornecliffe Collieries, and another attempt has been made to bring the dispute to a close; but it is by no means apparent that the old hands will be allowed to resume work unless they agree to the proposals of the proprietors. The county rate will be applied in paying the constables who protect the lives and property of the men now at work, and which is no more than fair, unless, indeed, police rates are to be paid without protection being afforded to the ratepayers.

A distressing accident has happened at Mr. B. Huntsman's West Retford Colliery, near Sheffield. The colliery in September last took fire, and to extinguish the flames both the shafts were closed. Since January the work of clearing the shafts has been going on, and on Thursday several men were engaged assisting in this duty. One of them struck into the furnace drift, and liberated a large quantity of carbureted hydrogen. The six men employed in that part were rendered insensible. Four recovered sufficiently to reach the bank, but the remaining two, when brought to surface, were dead.

REPORT FROM MONMOUTH AND SOUTH WALES.

April 7.—Quite in accordance with the expectations generally formed, the efforts of the second-class houses to bear down prices at the close of the quarter met with no success at the Quarterly Meetings of the Ironmasters. As was predicted, the position of the trade was found to be such as could not fail to induce makers to give such an attempt a direct negative. The progress made since the beginning of the year, it must again be admitted, has not been so great as many anticipated, but there has been a gradual improvement in the trade, and a steady advancement being still evinced, any faltering or irresoluteness on the part of manufacturers would be altogether out of place while they are in a fair way to increased business. Prices are now fixed for the next three months at least, and the point alluded to being thus definitely settled, a fair degree of activity may be confidently looked forward to in the current quarter. Encouraging reports are received from all the principal establishments in this district, orders coming in with tolerable regularity, and no lack of employment is anywhere apprehended for some time to come. The rail-making department continues buoyant, with every prospect of further increased activity in the trade, with the Russian and American ports more especially. From the American markets advices tend to show that there will yet some time elapse before the proposed new tariff law will come into effect, in the event of its being carried at all. It is expected at least that it will be impeded in its progress through the Representative House during the summer months, so that it will not materially interfere with negotiations for any description of make during this year. The fact that the feeling in favour of free trade, according to what is believed to be reliable report, is gaining rather than losing strength, goes a long way to support this opinion. The home trade presents no fresh feature for comment, orders being still given out with a sparing hand by the home railway companies. But the same remark is applicable to this as to the foreign trade. Purchases must eventually be made, and now that buyers cannot expect any remission in rates they are not likely to hesitate much longer in giving out such contracts that relaying necessities to them to do; indeed, the probability is that if much further delay is indulged in makers' time will be so taken up with foreign engagements that they will hardly be able to attend to home requirements with anything approaching prompt execution. In the demand for bars there is some improvement evinced, and there is some likelihood that the demand for iron for shipbuilding purposes will shortly further increase. Tin-Plates are firmer, and at the Quarterly Meeting, on Wednesday, an advance of 1*s.* per ton was determined upon.

The position of the Steam Coal Trade has varied but little since last week, the demand from the foreign markets continuing good. The predictions ventured upon in former reports as to the course the majority of the colliers in this district were likely to take in regard to the wages question have been fully verified. It was stated that the mass of the men did not sympathise with the haste and undue pressure which was being put upon their employers, and that rather than resort to anything like a hostile movement against the masters they would prefer to work during the present month on the old scale of wages. At the adjourned meeting, held at Pontypridd, it was decided by a majority of those present not to press the notice which had been given, but to accept the terms proposed by their employers, that an advance should be granted from and after May 1. It was, however, hinted by some of the men that the conciliatory course which they were going to adopt ought to be recognised in some way by the masters—perhaps, by their giving a slight rise during the latter half of the present month. Some of the more wealthy employers may, probably enough, show their appreciation of the good sense which has prevailed amongst the colliers, in not allowing themselves, this time at least, to be dictated to by interested delegates. In reference to the House Coal Trade, it can hardly be said that orders are coming in quite so freely as many anticipated, and complaints are heard here and there of some slackness in the trade. With a continuation of the present favourable weather, however, it is hoped that the shipments coastwise will be increased. The position of the house coal proprietors in reference to the proposed advance in wages is rather a peculiar and unfortunate one. Their branch of the trade has not improved to anything like the extent that the steam coal branch has, and many of them argue, and not without good reason, that they cannot fairly be called upon to grant any rise whatever to their men. The price of house coal is now nearly the same as twelve months ago, and with no prospect that any decided rise can be looked forward to with any amount of confidence. The difficulty is to convince the men that such is really the case, because when they see other fellow-workers in steam coal pits obtain a rise they naturally fancy that they are ill-treated unless a similar advance in wages is extended to them. At several of the No. 3 bituminous pits in the Rhondda Valley the men, it appears, have turned out, and intimated that they will not resume work until their employers grant them an advance. What will finally be determined upon at the end of the month is not yet known, but the probability is that the house coal proprietors will concede some rise in the scale of wages now paid—perhaps one-half of that granted by the steam coal owners.

The strike of the ironstone miners in the employ of the Rhymney Iron Company has terminated. A deputation of the miners and colliers waited on the manager of the works, and they were given to understand that the company would accede to their terms. The men, therefore, having spent a week in idleness, returned to work on Monday on the advances they applied for. During the last week or two it has been pretty currently reported that the Dowlais Iron Works were about to be offered for sale, and the report is now stated to have been founded on fact, and that the price named for the concern is 1,000,000*l.*, but it is expected that a capital of fully 3,000,000*l.* will be required to take the business as it stands entirely out of the hands of the proprietors. The event has necessarily caused considerable anxiety in the neighbourhood. The only reason given for the unexpected circumstance is that Sir Ivor Guest, the owner of the vast property, has no taste for the trade, and wished to be relieved of the responsibilities and anxiety of such an undertaking. These extensive works, including the iron works, the ironstone mines, and the collieries, give employment to something like 8,000 people, and are calculated, therefore, to have dependent upon them upwards of 30,000 persons of various avocations. They are amongst the largest works in the world; and to float a company possessing sufficient capital to purchase them, and to keep them in motion, would be no ordinary undertaking. The present favourable and healthy condition of the iron trade, however, will, no doubt, very materially assist in bringing about a speedy and satisfactory settlement, without in any way interfering with the carrying on of the works.—[It is right to mention that we have

received an intimation, since our correspondent wrote, that the statements contained in the above notice are unauthorized.]

It is now confidently reported that the Pendydarren Iron Works, which have so long lain idle, will very shortly be set in motion again, the difficulties which had to be fought through by the present owner, Mr. R. Fothergill, M.P., having been successfully removed. The intelligence is very encouraging to the neighbourhood.

A deputation from the Welsh Colliers' Committee, appointed to consider the Home Secretary's Mines Regulation and Inspection Bill, have attended a meeting of M.P.'s at Lord Elcho's house. The deputation were introduced by Mr. R. Fothergill, M.P., one of the Members for Merthyr, and they took part in a discussion on the measure in question. The deputation objected to the first paragraph of the 19th clause, which gives the managers and owners of collieries considerable power over the men, and they advocated the appointment of salaried inspectors. Lord Elcho and other members suggested that if reports of the state of the pits were furnished to the Inspectors twice a week the object of the clause would be secured quite as well. The deputation returned with the conviction that it would be useless to press the matter of sub-inspectors.

The arrivals at Swansea include—the Clarissa, from Holland, with 315 tons of copper ore, for Richardson and Co.; T. G. V., from St. Malo, with 120 tons of zinc ore, to order; Georgiana Grenfell, from Carisbrooke, with 100 tons of copper regulus, for H. Bath and Son; William Standard, from Lisboa Navarro, from Carlisle, with 783 tons of zinc ore, for H. Bath and Son; Lorraine Sempron, from Bilbao, with 380 tons of iron ore, in bulk, and one case of some mineral, to order.

THE TIN-PLATE TRADE.—The Quarterly Meeting of the trade was held at Gloucester, on Wednesday, Mr. Woodruffe, of the Machen Works, Monmouthshire, in the chair. Among the buyers represented were Bolitho and Sons, Nash and Co., Withmore and Co., Von Dadelz and North, and Williams, Harvey and Co. There was a large attendance of manufacturers. The reports received from the various works show that some improvement has taken place in the trade as compared with three months ago, and had it not been for the rise in the price of tin caused, it appears, by speculative purchases, still greater progress would have been made towards a recovery from the depression which has so long prevailed. There were no stocks in makers' hands, but at Liverpool the stocks are considerable, and the same may be said respecting the New York market. Buyers are also labouring under much difficulty in New York, in consequence of the rapid fall in the price of gold, which necessitates particular caution in entering into purchases. Altogether, the prospects of the trade were considered fairly favourable, and it was resolved that, considering the state of the tin market, makers be recommended to reduce the production 20 per cent., and advance the price of tin-plates 1*s.* per lb. With the reduction proposed in the make loyally adhered to there is no doubt that the advance will be maintained.

THE SEVERN JUNCTION SCHEME.—The majority of our readers are doubtless aware that the parliamentary committee of the House of Commons has declared the preamble of the Bill of the promoters of the line popularly known as "The Severn Junction Scheme" not proved. In other words, the collective wisdom of the committee (after a patient hearing) has declared that the benefits expected to accrue to the South Wales coal basin, and to the commercial and maritime interests of the ports in the Bristol Channel, from the contemplated lines were not such as to justify the expenditure of the money in the undertaking. Speaking on behalf of the shippers and merchants in the Bristol Channel, we respectfully differ with the result which the committee has arrived at; but we must bow to the decision and patiently wait the arrival of the time when the benefits which shall accrue from a greater development of the resources of the South Wales basin shall become so patent that even interested parties will be bound to admit the justice of the claims, and Parliament forced to give its assent to a scheme demanded by public requirements. The great object of the "Severn Junction" was to give more easy and direct communication between the South Wales coal districts and the metropolis, and also to afford fresh outlets for the precious "black diamonds," by opening up more direct access to several ports in the Bristol Channel. It is almost difficult to conceive upon what ground a scheme fraught with public advantage could be opposed; and yet it is impossible to ignore the fact that in certain quarters the idea is pronounced utopian, and a degree of pleasure and gratification is publicly expressed that the Bill has been thrown out by the parliamentary committee. Probably we shall not be far wrong when we say that the whole opposition which this scheme has met with has arisen from a petty feeling of jealousy on the part of the Great Western Railway Company, and the Midland Company dividing with them the carriage of minerals. It is well known that the Midland and other powerful railway companies have for a considerable time past kept a long eye upon the rich and boundless coal fields of South Wales, and with this object in view have steadily advanced step by step, in spite of opposition and difficulty. We do not blame the Great Western Railway Company for employing every legitimate means in their power to keep their own powerful rivals in the traffic of a district which may justly be regarded as their own; but, on the other hand, we contend that if other companies were excluded the Great Western is bound to develop the trade of the district to its very fullest extent. Has this been done hitherto? Is it done at the present? We hesitate not to say that the great majority of the coal shippers of Wales would give an emphatic "No" to these questions. For very many years past the narrow gauge has been the universal cry of the colliery proprietors of South Wales, hitherto unresponded to. Scarcely a local person has serious cause of complaint as to the want of proper facilities for the shipment of coal, but all are disregarded, and the coal trades generally languish in consequence of the apathy to its interests by its carriers. No wonder, then, that other outlets for the products of the district are anxiously sought for, and that the access of other lines to the coal basin, which would break the monopoly which the Great Western practically has in the carriage of minerals, would be gladly welcomed. The "Severn Junction Scheme" was justly regarded as a step in this direction. Unfortunately, as we think, the parliamentary committee has rejected the Bill. We, however, venture to say that the scheme has not been abandoned; it has claims which cannot be resisted much longer. In the meantime, if the Great Western Company would consult their own interests they would read in the "signs of the times" the significant fact that the colliery proprietors of the South Wales districts, and the merchants and shipowners of the Bristol Channel generally, are not satisfied with the state of things as they now exist, and if the Great Western would still retain the monopoly in the carriage of coal from South Wales they must give far greater advantages for the development of trade, and afford better facilities for the shipment of coal to the various local ports now exist. Unless this is done the time is not far distant when other companies shall come in and divide the traffic, to the advantage of the whole of the traders of the district.

We are requested to correct an erroneous statement which appeared in last week's Journal with reference to the Morfa Colliery explosion. Our Correspondent wrote:—"The bodies of the overman and some other officials are still in the workings." Now, there are in the bottom of the sinking shaft two sinkers and the waiter-on, or bank-man—total, three in the pit. Two of the overmen are convalescent, and the other was brought out the same day, with leg broken, and died in consequence of loss of blood.

COLLIERY ACCIDENTS.—Mr. Peter Higson, the Inspector of Mines for the South-West Lancashire and North Wales district, has issued a circular, in which he says:—

It is with sincere and painful regret that I again call your attention to the great loss of life and limb at the mines of this district in the year 1869, particularly from explosions of gas and gunpowder, which has been greater in the last than in any preceding year or in any other district. That this has been promoted, and in many instances caused, by the ignorant and reckless use of gunpowder, by blasting without having first cut or nicked the coal on one side, by the firemen omitting to examine all places adjoining that in which the shot had to be fired, and by not seeing the shot-hole properly drilled and charged, there can exist no longer any doubt. It, therefore, appears to me desirable that, in all cases where practicable, the coal should be holed and cut on one side before blasting be attempted; that the shot-holes should be set out, charged, and fired by a competent person or persons; and that in mines which emit inflammable gas, and in all pillar workings, blasting should be strictly prohibited, if it can possibly be dispensed with. No gunpowder should be taken down the pit except in cartridges containing a proper charge, and no person should be permitted to take down the pit a greater number of cartridges than he is likely to require in one day. Before attempting to fire a shot the place, and those on every side adjoining it, should be carefully examined by a competent man. Only one shot should be fired at a time; and, before firing a second shot, another or second inspection should be made; and so in like manner after every shot has been fired. The gas which caused the explosion at Haydock Colliery, on July 21 last, was said by some of the witnesses to have been driven by a fall from a hole in the roof; if so, it is necessary that all holes or cavities overhead should be ventilated; and by a recent decision of the court it is now rendered a compulsory measure. I have to request that all notices of accidents in and about mines be sent as soon after the occurrence as convenient, and that they may contain the age, occupation, and particulars of the casualty causing loss of life or personal injury. In addition to the foregoing suggestions for your future guidance, and those contained in my circular letter of Jan. 1, 1869, which will, I hope, be properly observed, I have to exhort you to prohibit persons travelling on engine and self-acting planes, and provide wherever you can another road for the ingress and egress of the workpeople.

A REAL SAFETY-LAMP.—For several years past various inventions have been patented, with a view to prevent the ordinary safety-lamp (so necessary for working with in mines) from being tampered with. Locks of almost every conceivable description have been brought out, but in nearly all instances they have not been secure from the evil genius of the reckless collier, who, either to obtain a little more light, or to get at the flame for the purpose of lighting his pipe, will tamper with them. We have, however, just been favoured with a view of a lamp which appears to combine all the essentials so long desired, and by which any tampering with is shown in a very peculiar manner. The lamp is the invention of Mr. E. Booth, mining engineer, and managing partner of the Silkstone Fall Colliery Company, near Barnsley, who is now having it patented. In the invention there is no lock whatever, or even fastener, the bottom being simply screwed and unscrewed by turning it at the bottom with the hand. After the wick of the lamp is light

THE MINING JOURNAL.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the HALLENBEAGLE AND EAST DOWNS MINING COMPANY.—Notice is hereby given, that ALL CREDITORS of the above-named company are required, on or before Monday, the 25th day of April next, TO SEND IN THEIR NAMES AND ADDRESSES, and the AMOUNTS and PARTICULARS of THEIR SEVERAL CLAIMS on the said company, to the Registrar of the said Court, at Truro.

FREDERICK MARSHALL, Registrar.

Dated Registrar's Office, Truro, April 4, 1870.

In the Court of the Vice-Warden of the Stannaries.
Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACT, 1862, and of the TREVENEN AND TREMENHEER UNITED MINING COMPANY.—Notice is hereby given, that ALL CREDITORS of the above-named company are required, on or before Monday, the 25th day of April next, TO SEND IN THEIR NAMES AND ADDRESSES, and the AMOUNTS and PARTICULARS of THEIR SEVERAL CLAIMS on the said company, to the Registrar of the said Court, at Truro.

FREDERICK MARSHALL, Registrar.

Dated Registrar's Office, Truro, April 4, 1870.

UNRESERVED SALE OF MINE AND MATERIALS.

SNAEFELL MINING COMPANY (LIMITED).

IN LIQUIDATION.

TO BE SOLD, BY AUCTION (by Order of the Liquidators appointed by the company), on Wednesday, the 27th day of April inst., at twelve o'clock noon, in the Parlour at St. James's Hall, Douglas, Isle of Man, all and singular the SNAEFELL MINE, situate in the parish of Lonan, in the Isle of Man, together with the LEASE, and all PLANT, IMPLEMENTS, MATERIALS, and PROPERTY of every kind belonging to the said mining company.

The mine is held under lease from the Crown for a term of years, of which eighteen years were unexpired on the 16th October last. The site consists of 567 acres of land in the parishes of Lonan and Lesayre.

Snaefell Mine is in good working order, and the plant, amongst other articles, consists of WATER WHEEL, 50 ft. diameter, by 3 ft. 6 in. breast, with all requisite gear for pumping and drawing.

There are on the premises—Joiner's shop, changing-house, lead-house, crushing-mill, smithy, with tools, &c.; office, with furniture and fixtures; miner's cottage, with furniture.

The washing-floors, though small, have all requisite fittings for washing and dressing.

There are small quantities of iron, steel, timber, and other stores on the premises, and a variety of mining tools, implements, and materials.

The shaft is sunk to a depth of 70 fms., with levels at 25, 40, 50, and 60 fms. below the adit.

Both lead and blonde ores are being raised from the mine, and the purchaser will be entitled to any ore raised, if not dressed previous to the sale.

The whole will be set-up for sale in One Lot, and will be sold without any reserve.

The mine and property can be inspected at any time on application to Capt. HENRY JAMES, the manager, and further particulars obtained from the undersigned.

By order of the Liquidators, WM. BECKWITH.

Bank Chambers, Douglas, 1st April, 1870.

CLOUGH COLLIERIES, COUNTY KILKENNY.

TO MINING COMPANIES, CAPITALISTS, AND OTHERS.

THE above VALUABLE ANTHRACITE COAL MINES, known as the CLOUGH COLLIERIES, situate on the north margin of the county Kilkenny with the Queen's county, will be LET, ON LEASE, on most advantageous terms. They are within a moderate distance of the railways at Clough, Ballyragget, Carlow, Athy, Maryborough, Abbeyleix, and other stations, and of the Barrow and Grand Canal Navigations at Carlow and Athy.

There is a constant demand for the produce of the mines, which will be largely increased by steadiness in the supply, and eventually the application of it to railway and steam-ship purposes.

The Great Southern and Western Railway have for some time been using large quantities of anthracite coal, delivered at Athy. The royalty extends under more than 2200 statute acres of the townlands of Clough and Chatsworth, or Aughatubrid, the property of George Bryan, Esq., M.P.

All the coal seams wrought in the vicinity are contained in the royalty. The Three Feet or Old Kilkenny Seam, the Four Feet or Jarow Seam, and the Rush or Two Feet Seam. A pumping engine, horse whim, weighbridge, &c., which have been erected at the Broompark, on the latter seam, can be had at a valuation. The workings are well laid out, are in good order, with railways, &c., and with a trifling outlay that concern can be put to work in a short time. Abundance of fire-clay, of very superior quality, accompanies the Three Feet Seam and Rush Seam, and ironstone is to be found with all the seams. Brick clay abounds, and water power for any purpose is available. So favourable an opportunity for the remunerative application of capital to the development of one of Ireland's great resources is seldom to be met with.

Proposals will be received, and full particulars given, on application to PATRICK FENOL, Esq., Clough Collieries, Castlecomer, County Kilkenny, who will assist in any examination of the mines; WILLIAM LEWIS, Solicitor, 50, Dawson-street, Dublin; or to JAMES BARLOW KENNEDY, Solicitor, Mountjoy-square, Dublin.—March 23, 1870.

FOR SALE.

TH E ULING COAL MINES, situated in the district of NAGA, in the Island of CEBU (Philippine Islands). The distance from the mines to the sea shore is 10 kilometres, the whole of which is a carriage road.

The company possesses a royalty of 50 lots, comprising together 9,000,000 of square metres of ground, with several seams of COAL, two of which, of three and four metres in thickness, have been proved through a distance of two kilometres.

The principal workings consist of two drifts, each 550 metres in length, which have already cut through three of the coal seams, and are now (August, 1869) calculated to be within 50 metres distance of the large ones, and at a depth of 150 metres from the surface of the ground.

The Spanish war steamers have made use of this coal, the consumption of which has been recommended by the Government.

The company have cattle in abundance, carts, and every requisite means for conveying the coal as quickly and as economically as possible.

There are in the neighbourhood of the mines large forests, and large lots of uncultivated ground, which now produces timber necessary for the use of the mines, and which may afterwards be turned into tobacco or sugar cane plantations, for which purpose it is admirably adapted.

The mines in the Philippine Islands are not subject to any tax, and all machinery required for coal digging, &c., is free of any duty.

The laws allow any foreigner to purchase, keep, and work the mines.

The sale will take place in Manila, by public auction, on the 31st May, 1870.

For further particulars, apply to ROXAS HERMANOS, or to DR. ALFAYA Manilla.

VALUABLE FREEHOLD ESTATE.

FOR SALE, a FREEHOLD PROPERTY, containing about 750 acres of arable, pasture, and woodland, situate in a beautiful part of SOUTH WALES.

There is excellent woodcock shooting, and good covers for other game, also capital fishing in the neighbourhood.

The Estate contains immense quantities of COAL and IRONSTONE, and presents to a purchaser the very unusual combination of an attractive residential and improvable property, with a high rate of interest on the purchase-money.

For further particulars, apply by letter to W. D. S. COOPER, Esq., Solicitor, 32, Lincoln's Inn-fields, London.

FIFESHIRE.

COAL FIELD TO LET.

TO BE LET, for Nineteen Years, with entry at Lammas next, the COAL FIELD of CLUNY, in the parishes of KINGLASSIE and AUCHTERDERRAN, and county of FIFE, with the COLLIERIES' HOUSES, all as lately possessed by Messrs. LANDALE and BOYD, Coalmasters, with a trifling alteration in the marshes, and with the exception of some of the houses formerly occupied in connection with the colliery.

The coal field has been partly fitted up with MACHINERY and PLANT, and such a tenant will be bound to take at a valuation. The machinery is new, and of an excellent description, and suitable for the field.

The coal in the adjoining lands has been wrought for many years, and proved to be of an excellent quality, and it is expected that the field now to be let will be equally good.

If desired, a FIELD OF LAND can be LET along with the coal field.

For further information and particulars, applicability may be made either to Messrs. DUNDAS and WILSON, C.S., 16, r.t. Andrew-square, Edinburgh; or to Mr. J. and G. H. GEDDES, M.E., 9, Melville-crescent, Edinburgh; or to Mr. J. Gow, Ralfe, Kirkcaldy, who will give directions for showing the premises and boundaries, and either of them will receive offers up till 12th April next.

Edinburgh, 24th March, 1870.

TO BE LET, a VALUABLE COAL FIELD, in NOTTINGHAM-SHIRE, containing between TWO THOUSAND and THREE THOUSAND ACRES of the TOP HARD SEAM of COAL.

Apply to Mr. T. W. JEFFCOCK, 18, Bank-street, Sheffield.

TO BE LET, ON LEASE, for a term of years, SEVERAL ACRES of LAND, suitable for MANUFACTURING PURPOSES, advantageously situated on the south bank of the River Tyne, about two miles below Newcastle-on-Tyne, and within a quarter of a mile from the North-Eastern Railway. There is a good quay frontage, with deep water.

Apply to Mr. T. S. BRAHWEILL, King-street, Quay-side, Newcastle-on-Tyne.

NORTH WALES.

FOR SALE, BY PRIVATE CONTRACT, part of a most VALUABLE SLATE AND SLAB PROPERTY, held on lease for a term of 40 years, from March, 1863, at 1s-6d. royalty.

The property advertised is a counterpart of a slate and slab range now in work, the merits of which will bear the fullest investigation.

Both the slate and stone veins are unusually thick, and require, comparatively, but small capital to return large profits.

The property has the advantage of a splendid water power, and a tramway passes through the seat to the shipping port—distance about six miles.

Full particulars can be had by applying by letter, to "Box C 31," Post Office, Liverpool; or to

Mr. JOSEPH KELLOW, Quarry Engineer, 2, Park-terrace, Port Madoc, North Wales.

TO ENGINEERS, &c.

NEW MOTIVE POWER,
COMBINED AIR AND STEAM,
SAVING ABOVE FIFTY PER CENT. FUEL.

GALLOWAY AND COMPANY WILL GRANT LICENCES TO ENGINEERS to APPLY MR. G. BELL GALLOWAY'S INVENTION to all DESCRIPTIONS OF ENGINES, as contained in his Patent dated January 7th, 1863.

For terms of Licence, address B. FOTHERGILL, Esq., C.E., 15, George-street, Mansion House, London.

MINING SETTS IN DEVON.

TIN, COPPER, AND LEAD, in the Manor of SHEEPSTOR, and LANDS in TAVISTOCK, WHITCHURCH, PETER Tavy, LAMERTON, and LIDFORD. Water power. Terms, 21 years, renewable. Dues, 1s-6d. for Tin, 1s-6d. for Copper and Lead, reduced to 1s-6d. after a moderate outlay, until mines pay cost.

Apply to Mr. Carter, Solicitor, Plymouth.—Feb. 19, 1870.

VALUABLE CORNISH MINING MACHINERY.

MESSRS. J. C. LANYON AND SON have FOR SALE a very superior lot of the above, including—
80, 60, 50, 30, and 24 inch PUMPING ENGINES;
24 inch ROTARY ENGINE, with CAPSTAN;
22 inch ditto, with CAPSTAN and CRUSHER;
Several good BOILERS;

A large assortment of PITWORK of all sizes; STRAPPING PLATES, rolled and faggoted, all of which are secondhand, in good condition, and will be sold on very reasonable terms.

For particulars, apply to—
LANYON AND SON, MERCHANTS, REDRUTH.

Dated Redruth, Feb. 23, 1870.

SOUTH EXMOUTH MINE, HENNOCK, DEVON.

FOR SALE, BY PRIVATE CONTRACT, the following, viz.:—
40 in. cylinder PUMPING ENGINE,
25 in. cylinder WHIM ENGINE, with CRUSHER attached.
60 fms. 11 and 12 in. PUMPS in shaft.
30 fms. 11 and 12 in. PUMPS at surface.

Timber, and various useful mining materials.
Apply to Capt. JOHN CORNISH, Frank Mills Mine, Christow; or to Mr. J. O. HARRIS, Public Accountant, 2, Gandy-street, Exeter.

FOR SALE, BY PRIVATE CONTRACT, at PAR CONSOLS MINE, near Par Station, CORNWALL,

EIGHT STEAM ENGINES.

Including ONE 50 in. (with BOILER), for pumping, stamping, and drawing purposes; THREE HUNDRED PUMPS, from 6 in. to 20 in.; H and door-pieces; hammered iron rod plates; rail, scrap, and cast iron; with a large quantity of useful MINING MATERIALS.

For particulars, apply to Capt. PUCKEY, at the counting-house.

PERRAN FOUNDRY, CORNWALL.

ENGINES AND MINING MACHINERY FOR SALE:—
ONE 36 in. PUMPING ENGINE, secondhand.

ONE 30 in. PUMPING ENGINE, secondhand.

ONE 11 in. HORIZONTAL HIGH-PRESSURE ENGINE, new.

ONE 8 in. HORIZONTAL HIGH-PRESSURE ENGINE, new.

BOILERS for the above.

A large assortment of new and secondhand PITWORK in stock, of all sizes at moderate prices.

Dated 14th December, 1869.

FOR SALE,—THE UNDERMENTIONED ENGINES:—
ONE 50 in. cylinder PUMPING ENGINE; with ONE BOILER.

ONE 36 in. cylinder ROTARY STEAM ENGINE, 9 ft. stroke, with 10 ton BOILER, wrought-iron fly-wheel shaft, and 12 ton fly wheel, nearly new from the works.

ONE 12 in. cylinder rotary STEAM ENGINE, with ONE 6 ton BOILER.

THREE Cornish BOILERS, from 10 to 12 tons each, in excellent condition.

Also, several Cornish CRUSHERS, of various sizes.

For further information, apply to W. MATHEWS, Engineer, Tavistock.

Tavistock, Aug. 17, 1869.

FOR SALE, cheap, several FIRST-CLASS NEW PORTABLE STEAM ENGINES, with all recent improvements, and guaranteed; 9-horse power, 12-horse power, and 25-horse power, ready for delivery.

Superior PIT WINDING GEAR supplied at a short notice, suitable for Portable Engines.

FOR SALE, an excellent SECONDHAND PORTABLE STEAM ENGINE, with a NEW MORTAR MILL.

Apply to—
BARROWS AND STEWART, ENGINEERS, BANBURY.

TH E HOLYFIELD LEAD MINING COMPANY (L I M I T E D).

THE FIRST GENERAL MEETING of this COMPANY, which has just been registered, was HELD at the Registered Office, No. 60, English-street, Carlisle, on THURSDAY, the 24th February.

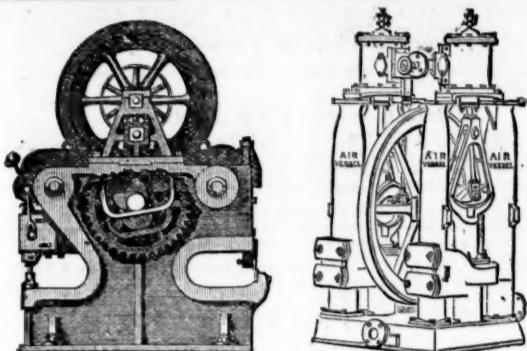
Mr. R. PERCY ROBERTS (the Secretary) read the notice convening the meeting.

Mr. HUGH PATTINSON, of Alston, was called to the chair, and in his opening remarks said that it afforded him much pleasure to be able to state that the prospect of the mine had unmistakable evidence of turning out one of the best mines in the Field.

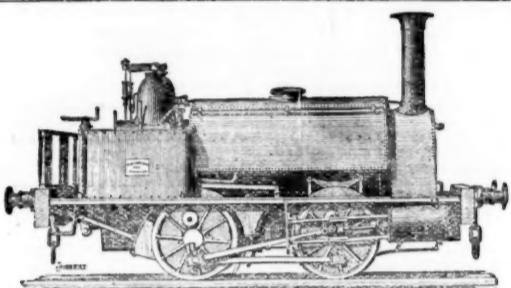
The present shareholders are quite aware that the "Holyfield" is not a newly-opened mine, but one that from mere surface working had turned out something like 20,000 bings of ore. What, then, may we not expect of such a mine when worked, as we are now doing, in depth? It must also be remembered that the Holyfield is situated in the finest beds of the Alston district, and adjoins the far-famed "Hudgiburn," the shareholders of which company realised their fortunes, and he believed the Holyfield would ultimately prove as satisfactory. I must inform the shareholders that we have had water to contend with, but this only gives additional weight to prove the value of the workings, for I have never heard of a really first-class mine but had water to contend with. Wallace, in his splendid work on mining, lays this down, I believe, as a law or certain index; or, in other words, where there are large quantities of lead there is also water. We shall, however, easily, I am glad to say, manage to keep the workings free from water, and it is proposed by the manager, Mr. Peart, to put in a whimsey, which will entail but a trifling cost. As to the un-oid shares, the number is about 3000, 2000 of which we can offer to the public, and retain 1000 for shareholders who have expressed a desire to increase their holding.

After which the directors and auditors were appointed.

Mr. JOHN PEART, the captain of the mine, stated that his last visit to the mine took place about ten days ago, and that the appearance of the mine was very promising indeed. The lead continued to bear through the several strata already cut through in sinking the sump, lead being, in fact, discovered at the quarry haze, which he had not expected, specimens of which were shown at the meeting. He considered the prospects of the mine most cheering, and entertained the strongest expectation that it would turn out to be a most profitable speculation

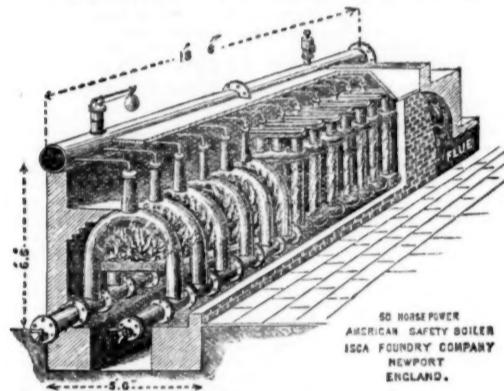


JOHN CAMERON,
MAKER OF
STEAM PUMPS, PORTABLE ENGINES, PLATE BENDING ROLLERS,
BAR AND ANGLE IRON SHEARS, PUNCHING AND SHEARING
MACHINES, PATENTEE OF THE DOUBLE CAM LEVER
PUNCHING MACHINE, BAR SHEARS, AND RAIL
PUNCHING MACHINES,
EGERTON STREET IRON WORKS,
HULME, MANCHESTER.



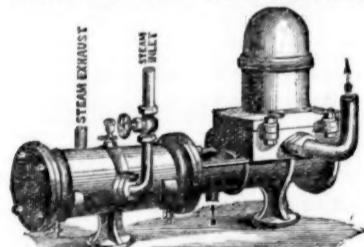
TANK LOCOMOTIVES,
FOR SALE OR HIRE.
HENRY HUGHES AND CO.
LOUGHBOROUGH.

ISCA FOUNDRY COMPANY,
NEWPORT, MONMOUTHSHIRE; and
25, LAWRENCE POUNTNEY LANE, LONDON, E.C.
MANUFACTURERS OF
MILLER'S SAFETY BOILER.



This boiler is safe from destructive explosions.
It evaporates 11 lbs. of water per lb. of coal.
It consumes its own smoke.
At 75 lbs. pressure the pyrometer applied in the flue only shows 360° of heat in
the waste gases.
It occupies only one-half the space of a Cornish boiler.
It can be erected at one-fourth the cost in labour and masonry.
Duplicate parts are always in stock for repairs.
A BOILER may be seen at work on application at NEWPORT.

PATENT UNIVERSAL STEAM PUMPS,
VERTICAL AND HORIZONTAL.



POWERFUL—SIMPLE—DURABLE—RELIABLE—CHEAP.
SUPERIOR TO ALL OTHER INVENTIONS.

SOLE MAKERS—

HAYWARD TYLER AND CO.,
84 AND 85, UPPER WHITECROSS STREET, LONDON, E.C.
* * WHERE IT CAN BE SEEN AT WORK.

GAMBLE'S PATENT STEAM LUBRICATOR.
FOR STATIONARY, LOCOMOTIVE, AND STEAM ENGINES.

SELF-ACTING

Lubricates all the valves and internal parts of the cylinder continuously. Effects a most important saving in the oil or tallow. Increases the regularity of working. Prevents frequent repairs.

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GRINDERS, MCADAM ROAD MAKERS, &c., &c.

BLAKE'S PATENT STONE BREAKER, OR ORE CRUSHING MACHINE,

FOR REDUCING TO SMALL FRAGMENTS ROCKS, ORES, AND MINERALS OF EVERY KIND.

It is rapidly making its way to all parts of the globe, being now in profitable use in California, Washoe, Lake Superior, Australia, Cuba, Chili, Brazil, and throughout the United States and England. Read extracts of testimonials:—

The Parys Mine Company, Parys Mines, near Bangor, June 6.—We have had one of your stone breakers in use during the last twelve months, and Captain Morcom reports most favourably as to its capabilities of crushing the materials to the required size, and its great economy in doing away with manual labour. For the Parys Mining Company, JAMES WILLIAMS.

Ecton Emery Works, Manchester.—We have used Blake's patent stone breaker made by you, for the last 12 months, crushing emery, &c., and it has given every satisfaction. Some time after starting the machine a piece of the moveable jaws about 20 lbs. weight, chilled cast-iron, broke off, and was crushed in the jaws of the machine to the size fixed for crushing the emery. H. R. Marsden, Esq.

Alkali Works, near Wednesbury.—I at first thought the outlay too much for so simple an article, but now think it money well spent. WILLIAM HUNT.

Welsh Gold Mining Company, Dolgelly.—The stone breaker does its work admirably, crushing the hardest stones and quartz. WM. DANIEL.

Or 15 by 7 in. machine has broken 4 tons of hard whinstone in 20 minutes, for fine road metal, free from dust. Messrs. ORD and MADDOCK, Stone and Lime Merchants, Darlington.

Kirkless Hall, near Wigan.—Each of my machines breaks from 100 to 120 tons of limestone or ore per day (10 hours), at a saving of 4d. per ton. JOHN LANCASTER.

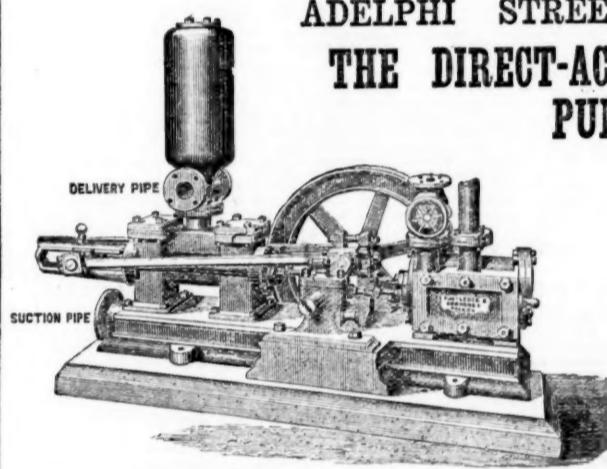
Owca, Ireland.—My crusher does its work most satisfactorily. It will break 10 tons of the hardest copper ore stone per hour. WM. G. ROBERTS.

General Fremont's Mines, California.—The 15 by 7 in. machine effects a saving of the labour of about 30 men, or \$75 per day. The high estimation in which we hold your invention is shown by the fact that Mr. Park has just ordered a third machine for this estate. SILAS WILLIAMS.

For circulars and testimonials, apply to—

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MEADOW LANE, LEEDS,
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ROUTLEDGE AND OMMANNEY, ENGINEERS, ADELPHI STREET, SALFORD, MANCHESTER, THE MAKERS OF THE DIRECT-ACTING DOUBLE HORIZONTAL PUMPING ENGINE.



THESE PUMPING-ENGINES are especially adapted for FORCING WATER OUT OF MINES, being simple in construction and reliable. They have now been at work many years in collieries, &c., and given every satisfaction.

PUMPS AND WINDING ENGINES

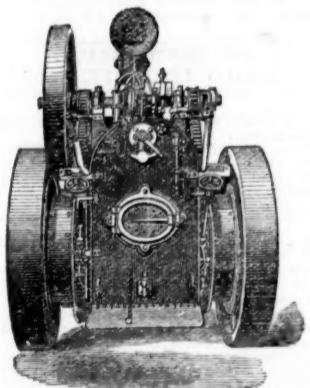
Especially designed for colliery purposes; also, AIR-COMPRESSING ENGINES, as used in connection with COAL-CUTTING MACHINES, &c.

Further information and prices forwarded on application.

R. and O. are also MAKERS of other classes of PUMPS and WINDING ENGINES.

ROBEY AND COMPANY, LIMITED, ENGINEERS, LINCOLN.

PATENT PORTABLE HAULING AND WINDING ENGINE, WITH PATENT DRUM WINDLASSES, FOR MINING PURPOSES.



This Engine is specially commended to Mining Engineers and others, as by its adoption—
Haulage along inclined drifts is easily and cheaply effected.
The expense of sinking new shafts is greatly reduced, neither foundations nor engine-house being required.
It is available not only for winding, but for pumping, sawing, &c.—a great desideratum at a large colliery.
It can be very quickly removed (being self-propelling), and fixed in any desired position.

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6 to 27-horse power. For steep inclines and curves

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Hoisting, cooking, and distilling. Passed for half-water.

MARINE ENGINES AND BOILERS,
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With or without boilers and connections.

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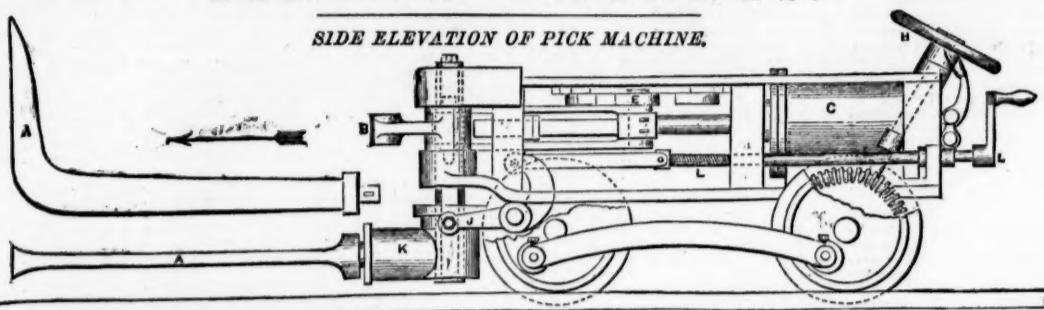
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OFFICE: 117, CANNON STREET, LONDON, E.C.

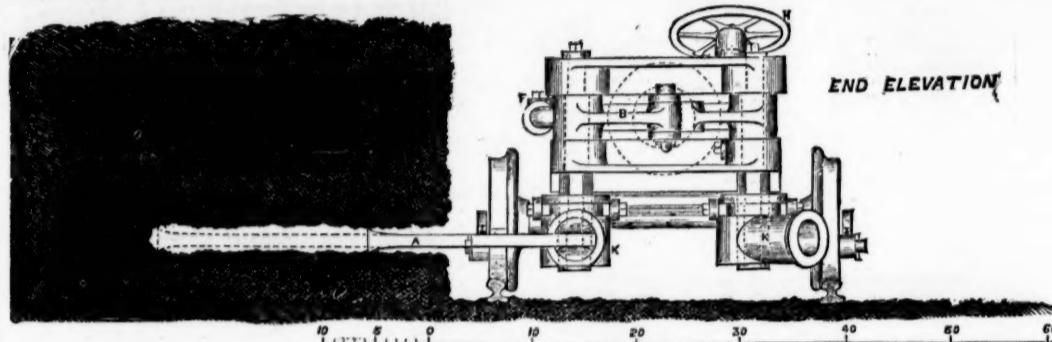
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SIDE ELEVATION OF PICK MACHINE.



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Both practically and commercially.

They are portable, easily managed, and not more liable to get out of order than other ordinary machinery. They EXPEDITE the OPENING of NEW PITS. There is LESS BREAKAGE of COAL, and a consequent INCREASE in its VALUE, with a DECREASE in its COST of PRODUCTION. THE VENTILATION OF THE MINE IS IMPROVED, the RISK OF ACCIDENTS DIMINISHED, and the SEVERE PHYSICAL CONDITIONS of COAL-PIT LABOUR are, by the USE of these MACHINES, MODIFIED and MUCH RELIEVED.

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**A SAVING OF ABOUT FIFTY PER CENT.
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In place of OLIVE and other kinds ordinarily used on STATIONARY, LOCOMOTIVE, MARINE ENGINES, and MACHINERY of all kinds, and the undersigned are so satisfied of the correctness of this statement, that they are willing, at their own risk, to forward a cask of about 30 gallons for trial to any respectable person or company, on the understanding that it may be returned in a month if it should not answer, when payment would not be required, except for the quantity used.

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It never "CLOGS," nor leaves any "GUMMY" deposit upon the bearings, which, therefore, never require cleaning or scraping, whereby much time, labour, and expense are saved. It is in use and approved of by the majority of the iron and coal companies in West Lancashire, where it was first introduced but a few months ago, also by several ocean steamer and ferry proprietors on the Mersey and elsewhere.

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FOR CONVEYING

CHARGE IN



SAFETY FUSE,

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BLASTING ROCKS, &c.

Obtained two PRIZE MEDALS at the "ROYAL EXHIBITION" of 1851; at the "INTERNATIONAL EXHIBITION" of 1862, in London; at the "IMPERIAL EXPOSITION" held in Paris, in 1865; at the "INTERNATIONAL EXHIBITION," in Dublin, 1865; at the "UNIVERSAL EXPOSITION," in Paris, 1867; and at the "GREAT INDUSTRIAL EXHIBITION," at Altona, in 1869.

BICKFORD, SMITH, AND CO. of TUCKINGMILL, CORNWALL, MANUFACTURERS OF PATENT SAFETY-FUSE, having been informed that the name of their firm has been attached to a fuse not of their manufacture, beg to call the attention of the trade and public to the following announcement:—EVERY COIL of FUSE MANUFACTURED by them has TWO SEPARATE THREADS PASSING THROUGH THE COLUMN of GUNPOWDER, and BICKFORD, SMITH, AND CO. CLAIM SUCH TWO SEPARATE THREADS AS THEIR TRADE MARK.

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The result of two months' trial of this battery shows that from six to seven tons of ore can be pulverised by each head in twenty-four hours. The price, and other particulars, can be obtained on application to—
HARVEY AND CO. SECONDHAND ENGINES and MINING MACHINERY, of all sizes, on hand. Hayle, March 10, 1870.

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THESE SIGNALS supply a want long felt in giving INSTANT COMMUNICATION in MINES at SEVERAL PLACES at the SAME TIME without the aid of electricity, but by a single rod or chain; so that a degree of safety is ensured hitherto unknown.

The price is also very low, and the mechanism so simple that any ordinary mechanic could put it in order if out of adjustment.

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